

\* Paul Schulwitz please. Please return all attachments with search results. Thanks.

Access DB# 114751

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: MOLLY CEPERLEY Examiner #: 59757 Date: 02/19/04  
Art Unit: 1641 Phone Number 302-0813 Serial Number: 10/000,172  
Mail Box and Bldg/Room Location: Room 3151 Results Format Preferred (circle) PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Molecular Labeling and Assay Systems using poly(aminoacid)  
Metal Ion complexes and linkers  
Inventors (please provide full names): Jesse Twu

Earliest Priority Filing Date: 11/30/00

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

① Please search for the compound of claim 1.  
Prefer T=protein (also any specific binding pair member defined in Table 1, <sup>(1,2)</sup>  
P= polyhistidine  
L= rhodamine (TEXAS RED<sup>®</sup>) [please also search L of claims 9 + pages 14-15 (terms in yellow)]  
M = Ni<sup>+2</sup>  
(polyhistidine/Ni complexes are known) (L) (T)  
→ this is used to link a dye to a specific binding member

→ looking for a polyhistidine/nickel complex attached to a dye.  
Polyhistidine further attached to a member of a specific binding pair (see Table 1).

Terms:

lumiphore, luminescence, luminescent energy transfer (between donor and acceptor), fluorophore, fluorescent, luminescence polarization

### STAFF USE ONLY

#### Type of Search

#### Vendors and cost where applicable

Searcher: \_\_\_\_\_ NA Sequence (#) \_\_\_\_\_ STN 378.05  
Searcher Phone #: \_\_\_\_\_ AA Sequence (#) \_\_\_\_\_ Dialog \_\_\_\_\_  
Searcher Location: \_\_\_\_\_ Structure (#) \_\_\_\_\_ Questel/Orbit \_\_\_\_\_  
Date Searcher Picked Up: \_\_\_\_\_ Bibliographic \_\_\_\_\_ Dr. Link \_\_\_\_\_  
Date Completed: 2/27 Litigation \_\_\_\_\_ Lexis/Nexis \_\_\_\_\_  
Searcher Prep & Review Time: 30 Fulltext \_\_\_\_\_ Sequence Systems \_\_\_\_\_  
Clerical Prep Time: \_\_\_\_\_ Patent Family \_\_\_\_\_ WWW/Internet \_\_\_\_\_  
Online Time: 35 Other \_\_\_\_\_ Other (specify) \_\_\_\_\_

L4 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:462548 HCAPLUS

DOCUMENT NUMBER: 137:30228

TITLE: Use of a poly(amino-acid)-metal ion complex to link a label to a species of interest

INVENTOR(S): Twu, Jesse J.

PATENT ASSIGNEE(S): Molecular Devices Corporation, USA

SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1215501	A1	20020619	EP 2001-310076	20011130
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002132254	A1	20020919	US 2001-172	20011130
PRIORITY APPLN. INFO.: US 2000-250681P P 20001130				
AB	Systems, including compns. and methods, for purifying and/or labeling proteins or other mols. of interest and/or for assaying the conformational and/or binding states of such mols. are described. The compns. may include products having the formula T-P-M-L where T is a species, M is a metal ion, P is a peptide or protein that binds the metal ion, and L is a luminescent label. The methods may include purifying and/or labeling a mol. of interest, detecting luminescence energy transfer, detecting disso. and/or assocn. of a mol. of interest, detecting a conformational change in a mol. of interest, and detecting an analyte, among others.			
IC	ICM G01N033-58			
CC	9-5 (Biochemical Methods)			
ST	poly amino acid metal ion complex labeling; peptide metal ion complex luminescent label; luminescence energy transfer assay label; conformation assay label			
IT	Phosphopeptides			
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (complexes with metal ion and conjugates with mol. of interest; poly(amino acid)-metal ion complexes to link labels to species of interest)			
IT	Dissociation			
	Molecular association (detection of; poly(amino acid)-metal ion complexes to link labels to species of interest)			
IT	Stains, biological			
	(for nucleic acid; poly(amino acid)-metal ion complexes to link labels to species of interest)			
IT	Drugs			
	(labeled; poly(amino acid)-metal ion complexes to link labels to species of interest)			
IT	Antibodies			
	Lipids, uses			
	Polymers, uses			
	RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (labeled; poly(amino acid)-metal ion complexes to link labels to			

species of interest)

IT Amino acids, reactions  
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study);  
RACT (Reactant or reagent); USES (Uses)  
(labeled; poly(amino acid)-metal ion complexes to link labels to  
species of interest)

IT Nucleic acids  
Oligonucleotides  
Proteins  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic  
preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant  
or reagent); USES (Uses)  
(labeled; poly(amino acid)-metal ion complexes to link labels to  
species of interest)

IT Nucleotides, preparation  
Polysaccharides, preparation  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST  
(Analytical study); PREP (Preparation); USES (Uses)  
(labeled; poly(amino acid)-metal ion complexes to link labels to  
species of interest)

IT Energy transfer  
(luminescence; poly(amino acid)-metal ion complexes to link labels to  
species of interest)

IT Peptides, preparation  
Proteins  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic  
preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant  
or reagent); USES (Uses)  
(metal ion complexes; poly(amino acid)-metal ion complexes to link  
labels to species of interest)

IT Microarray technology  
(microfluidic chip; poly(amino acid)-metal ion complexes to link labels  
to species of interest)

IT Buffers  
Calibration  
Conformation  
Cyanine dyes  
Fluorescent dyes  
Fluorescent substances  
Luminescent substances  
Microtiter plates  
Polarized luminescence  
Purification  
Test kits  
(poly(amino acid)-metal ion complexes to link labels to species of  
interest)

IT Reagents  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(poly(amino acid)-metal ion complexes to link labels to species of  
interest)

IT Enzymes, uses  
RL: ARG (Analytical reagent use); CAT (Catalyst use); ANST (Analytical  
study); USES (Uses)  
(poly(amino acid)-metal ion complexes to link labels to species of  
interest)

IT Polyamides, preparation  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic

preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(poly(amino acids), metal ion complexes; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Microparticles  
(polymeric, labeled; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Conformation  
(protein; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Molecules  
(purifn. or labeling of; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Proteins  
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)  
(purifn. or labeling of; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Nucleic acids  
RL: ANT (Analyte); ANST (Analytical study)  
(stains for; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Dyes  
(styryl; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Coordination compounds  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(with poly(amino acid); poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Dyes  
(xanthene; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT 71-00-1, Histidine, properties  
RL: PRP (Properties)  
(peptide contg.; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT 51-17-2D, Benzimidazole, compds., conjugates with metal ion complexes 91-20-3D, Naphthalene, compds., conjugates with metal ion complexes 91-64-5D, Coumarin, compds., conjugates with metal ion complexes 92-81-9D, Carbazine, compds., conjugates with metal ion complexes 120-12-7D, Anthracene, compds., conjugates with metal ion complexes 129-00-0D, Pyrene, compds., conjugates with metal ion complexes 135-67-1D, Phenoxazine, compds., conjugates with metal ion complexes 139-13-9D, Nitrilotriacetic acid, conjugates with fluorescent dye and complexes with metal ion 218-01-9D, Chrysene, compds., conjugates with metal ion complexes 260-94-6D, Acridine, compds., conjugates with metal ion complexes 588-59-0D, Stilbene, compds., conjugates with metal ion complexes 2321-07-5D, Fluorescein, compds., conjugates with metal ion complexes 3086-44-0D, Rhodol, compds., conjugates with metal ion complexes 3546-21-2D, Ethidium, compds., conjugates with metal ion complexes 6837-70-3D, Rosamine, compds., conjugates with metal ion complexes 13558-31-1D, compds., conjugates with metal ion complexes 14701-22-5D, complexes with peptide and conjugates with luminophor, uses 20074-52-6D, Ferric ion, complexes with



phosphopeptide and conjugates with luminophor, uses 22537-33-3D, Gallium, ion (Ga3+), complexes with phosphopeptide and conjugates with luminophor, uses 22541-18-0D, Eu+3, complexes with poly(amino acid) and conjugates with luminophor, uses 22541-20-4D, Terbium, ion (Tb3+), complexes with poly(amino acid) and conjugates with luminophor, uses 36015-30-2D, Propidium, compds., conjugates with metal ion complexes 138026-71-8D, Dipyrrometheneboron difluoride, compds., conjugates with metal ion complexes 436139-07-0D, compds., conjugates with metal ion complexes  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (poly(amino acid)-metal ion complexes to link labels to species of interest)

IT 71-00-1, Histidine, properties

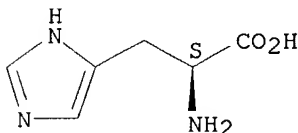
RL: PRP (Properties)

(peptide contg.; poly(amino acid)-metal ion complexes to link labels to species of interest)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

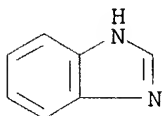
Absolute stereochemistry. Rotation (-).



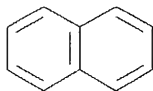
IT 51-17-2D, Benzimidazole, compds., conjugates with metal ion complexes 91-20-3D, Naphthalene, compds., conjugates with metal ion complexes 91-64-5D, Coumarin, compds., conjugates with metal ion complexes 92-81-9D, Carbazine, compds., conjugates with metal ion complexes 120-12-7D, Anthracene, compds., conjugates with metal ion complexes 129-00-0D, Pyrene, compds., conjugates with metal ion complexes 135-67-1D, Phenoxazine, compds., conjugates with metal ion complexes 139-13-9D, Nitritotriacetic acid, conjugates with fluorescent dye and complexes with metal ion 218-01-9D, Chrysene, compds., conjugates with metal ion complexes 260-94-6D, Acridine, compds., conjugates with metal ion complexes 588-59-0D, Stilbene, compds., conjugates with metal ion complexes 2321-07-5D, Fluorescein, compds., conjugates with metal ion complexes 3086-44-0D, Rhodol, compds., conjugates with metal ion complexes 3546-21-2D, Ethidium, compds., conjugates with metal ion complexes 6837-70-3D, Rosamine, compds., conjugates with metal ion complexes 13558-31-1D, compds., conjugates with metal ion complexes 14701-22-5D, complexes with peptide and conjugates with luminophor, uses 20074-52-6D, Ferric ion, complexes with phosphopeptide and conjugates with luminophor, uses 22537-33-3D, Gallium, ion (Ga3+), complexes with phosphopeptide and conjugates with luminophor, uses 22541-18-0D, Eu+3, complexes with poly(amino acid) and conjugates with luminophor, uses 22541-20-4D, Terbium, ion (Tb3+), complexes with poly(amino acid) and conjugates with luminophor, uses 36015-30-2D, Propidium, compds., conjugates with metal ion complexes 138026-71-8D, Dipyrrometheneboron difluoride, compds., conjugates with metal ion complexes 436139-07-0D, compds., conjugates with metal ion complexes  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(poly(amino acid)-metal ion complexes to link labels to species of interest)

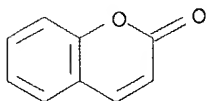
RN 51-17-2 HCAPLUS  
CN 1H-Benzimidazole (9CI) (CA INDEX NAME)



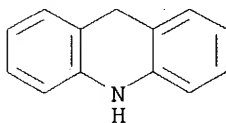
RN 91-20-3 HCAPLUS  
CN Naphthalene (8CI, 9CI) (CA INDEX NAME)



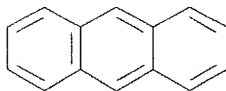
RN 91-64-5 HCAPLUS  
CN 2H-1-Benzopyran-2-one (9CI) (CA INDEX NAME)



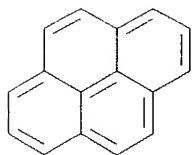
RN 92-81-9 HCAPLUS  
CN Acridine, 9,10-dihydro- (9CI) (CA INDEX NAME)



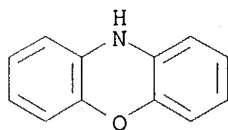
RN 120-12-7 HCAPLUS  
CN Anthracene (8CI, 9CI) (CA INDEX NAME)



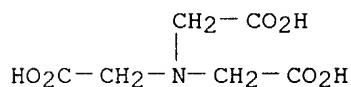
RN 129-00-0 HCAPLUS  
CN Pyrene (8CI, 9CI) (CA INDEX NAME)



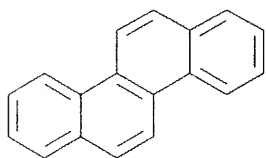
RN 135-67-1 HCAPLUS  
CN 10H-Phenoxazine (9CI) (CA INDEX NAME)



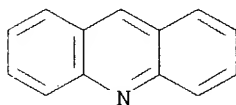
RN 139-13-9 HCAPLUS  
CN Glycine, N,N-bis(carboxymethyl)- (9CI) (CA INDEX NAME)



RN 218-01-9 HCAPLUS  
CN Chrysene (8CI, 9CI) (CA INDEX NAME)



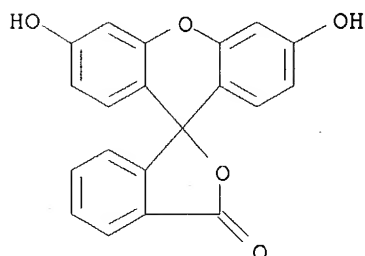
RN 260-94-6 HCAPLUS  
CN Acridine (8CI, 9CI) (CA INDEX NAME)



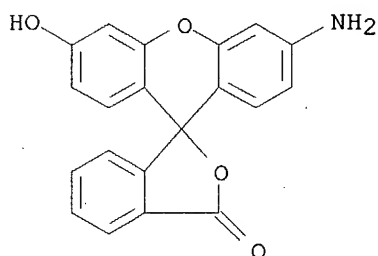
RN 588-59-0 HCAPLUS  
CN Benzene, 1,1'-(1,2-ethenediyl)bis- (9CI) (CA INDEX NAME)



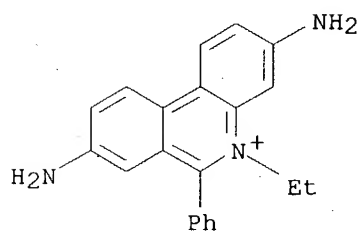
RN 2321-07-5 HCAPLUS  
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
(CA INDEX NAME)



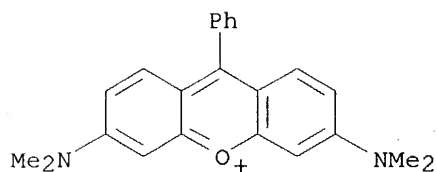
RN 3086-44-0 HCAPLUS  
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3'-amino-6'-hydroxy- (9CI) (CA INDEX NAME)



RN 3546-21-2 HCAPLUS  
CN Phenanthridinium, 3,8-diamino-5-ethyl-6-phenyl- (8CI, 9CI) (CA INDEX NAME)

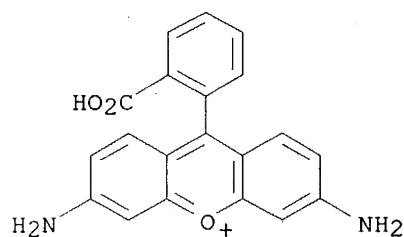


RN 6837-70-3 HCAPLUS  
CN Xanthylium, 3,6-bis(dimethylamino)-9-phenyl-, chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 13558-31-1 HCAPLUS  
 CN Xanthylum, 3,6-diamino-9-(2-carboxyphenyl)-, chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 14701-22-5 HCAPLUS  
 CN Nickel, ion (Ni2+) (8CI, 9CI) (CA INDEX NAME)

Ni<sup>2+</sup>

RN 20074-52-6 HCAPLUS  
 CN Iron, ion (Fe3+) (8CI, 9CI) (CA INDEX NAME)

Fe<sup>3+</sup>

RN 22537-33-3 HCAPLUS  
 CN Gallium, ion (Ga3+) (8CI, 9CI) (CA INDEX NAME)

Ga<sup>3+</sup>

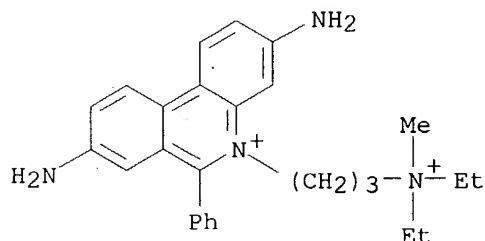
RN 22541-18-0 HCAPLUS  
 CN Europium, ion (Eu3+) (8CI, 9CI) (CA INDEX NAME)

Eu<sup>3+</sup>

RN 22541-20-4 HCAPLUS

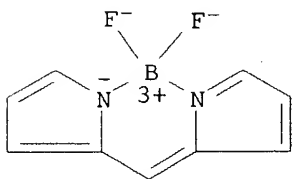
CN Terbium, ion (Tb<sup>3+</sup>) (8CI, 9CI) (CA INDEX NAME)Tb<sup>3+</sup>

RN 36015-30-2 HCAPLUS

CN Phenanthridinium, 3,8-diamino-5-[3-(diethylmethylammonio)propyl]-6-phenyl-  
(9CI) (CA INDEX NAME)

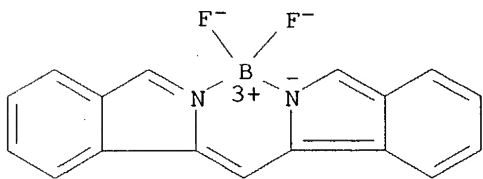
RN 138026-71-8 HCAPLUS

CN Boron, difluoro[2-[(2H-pyrrol-2-ylidene-.kappa.N)methyl]-1H-pyrrolato-.kappa.N]-, (T-4)- (9CI) (CA INDEX NAME)



RN 436139-07-0 HCAPLUS

CN Boron, difluoro[1-[(2H-isoindol-1-yl-.kappa.N)methylene]-1H-isoindolato-.kappa.N]-, (T-4)- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

2

THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

Ceperley 10/000,172

February 27, 2004

=> d que 162

L53 36735 SEA FILE=USPATFULL ABB=ON PLU=ON HISTIDINE OR POLYHISTIDINE  
L54 266073 SEA FILE=USPATFULL ABB=ON PLU=ON NI OR NICKEL  
L56 29551 SEA FILE=USPATFULL ABB=ON PLU=ON LUMINOPHOR? OR FLUOROPHOR?  
OR XANTHEN? ORE FLUORESCIEIN OR ROSAMINE OR RHODAMINE OR RHODOL  
OR CASCADE BLUE OR BENZOBODIP? OR TEXAS RED  
L61 24 SEA FILE=USPATFULL ABB=ON PLU=ON L53(S)L54(S)L56  
L62 24 SEA FILE=USPATFULL ABB=ON PLU=ON L61 AND LABEL?

=> d bib ab 1-24

L62 ANSWER 1 OF 24 USPATFULL on STN

AN 2004:44610 USPATFULL

TI Biotinylation of proteins

IN Zhang, Lin, O'Fallon, MO, UNITED STATES

PI US 2004033603 A1 20040219

AI US 2002-223560 A1 20020819 (10)

DT Utility

FS APPLICATION

LREP Donald R. Holland, Harness, Dickey & Pierce, P.L.C., 7700 Bonhomme,  
Suite 400, Clayton, MO, 63105

CLMN Number of Claims: 214

ECL Exemplary Claim: 1

DRWN 7 Drawing Page(s)

LN.CNT 1708

AB A eukaryotic bicistronic expression system for in vivo biotinylation of a protein is disclosed. The bicistronic expression system is based upon a polynucleotide which comprises a nucleic acid encoding a fusion protein made up of a selected protein and a biotinylation peptide, a nucleic acid sequence coding for an internal ribosome entry site and a nucleic acid sequence encoding a biotin ligase. Also disclosed are vectors and host cells containing the nucleic acid as well as methods for preparing a biotinylation protein and kits comprising the nucleic acid.

L62 ANSWER 2 OF 24 USPATFULL on STN

AN 2004:4515 USPATFULL

TI Compositions and methods relating to cyclic compounds that undergo nucleotide base pair-specific interactions with double-stranded nucleic acids

IN Dervan, Peter B., San Marino, CA, United States

Baird, Eldon E., Halfmoon Bay, CA, United States

PA California Institute of Technology, Pasadena, CA, United States (U.S. corporation)

PI US 6673940 B1 20040106

AI US 2000-479279 20000106 (9)

PRAI US 1999-115232P 19990108 (60)

DT Utility

FS GRANTED

EXNAM Primary Examiner: Low, Christopher S. F.; Assistant Examiner: Kam, Chih-Min

LREP Foley & Lardner

CLMN Number of Claims: 25

ECL Exemplary Claim: 1

DRWN 21 Drawing Figure(s); 13 Drawing Page(s)



LN.CNT 2284

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The design, synthesis, and use of cyclic compounds, including cyclic polyamides, is described. Such compounds comprise at least two polymer portions, one of which comprises at least three molecular units, and the other comprises at least four molecular units. At least one molecular unit of such a compound is a hydrogen bond donor or acceptor. The polymer portions are covalently linked to form a cycle. These compounds are capable of targeting specific nucleotide sequences in double-stranded nucleic acids, particularly double-stranded DNA. Accordingly, such compounds can be used to modulate, e.g., increase or decrease, the expression of one or more genes in vitro or in vivo.

L62 ANSWER 3 OF 24 USPATFULL on STN

AN 2004:2416 USPATFULL

TI Human voltage gated sodium channel beta1A subunit and methods of use

IN Qin, Ning, Blue Bell, PA, UNITED STATES

Codd, Ellen, Blue Bell, PA, UNITED STATES

D'Andrea, Michael, Cherry Hill, NJ, UNITED STATES

PI US 2004002439 A1 20040101

AI US 2003-401916 A1 20030328 (10)

RLI Division of Ser. No. US 2001-875456, filed on 6 Jun 2001, PENDING

PRAI US 2000-294405P 20000607 (60)

US 2000-236664P 20000929 (60)

DT Utility

FS APPLICATION

LREP PHILIP S. JOHNSON, JOHNSON &amp; JOHNSON, ONE JOHNSON &amp; JOHNSON PLAZA, NEW BRUNSWICK, NJ, 08933-7003

CLMN Number of Claims: 34

ECL Exemplary Claim: 1

DRWN 5 Drawing Page(s)

LN.CNT 2945

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB DNAs encoding human voltage gated sodium channel .beta.1A subunit have been cloned and characterized. The recombinant protein is capable of forming biologically active protein. The cDNA's have been expressed in recombinant host cells that produce active recombinant protein. The recombinant protein is also purified from the recombinant host cells. In addition, the recombinant host cells are utilized to establish a method for identifying modulators of the receptor activity, and receptor modulators are identified.

L62 ANSWER 4 OF 24 USPATFULL on STN

AN 2003:321334 USPATFULL

TI Inhibition of gene transcription by polyamide DNA-binding ligands

IN Gottesfeld, Joel M., Del Mar, CA, United States

Dervan, Peter B., San Marino, CA, United States

Mosier, Donald E., Del Mar, CA, United States

Baird, Eldon E., Lexington, SC, United States

PA California Institute of Technology, Pasadena, CA, United States (U.S. corporation)

The Scripps Research Institute, La Jolla, CA, United States (U.S. corporation)

PI US 6660255 B1 20031209

WO 9835702 19980820

AI US 2000-367513 20000425 (9)

WO 1998-US2444 19980211

PRAI US 1997-38384P 19970214 (60)  
US 1997-38394P 19970214 (60)  
US 1997-56048P 19970902 (60)  
US 1997-58338P 19970910 (60)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Travers, Russell; Assistant Examiner: Wang, Shengjun  
LREP Morrison & Foerster LLP  
CLMN Number of Claims: 7  
ECL Exemplary Claim: 1  
DRWN 61 Drawing Figure(s); 38 Drawing Page(s)  
LN.CNT 2780  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention provides polyamides suitable for modulating cellular or viral gene expression by binding to an identified target DNA sequence adjacent to the binding site of a minor groove transcription factor protein. The polyamides of the present invention are useful for the treatment of a human infected with a virus such as HIV-1. The polyamides of the present invention are also useful for the treatment of conditions, such as cancers, that result from the expression or over-expression of cellular genes, particularly oncogenes.

L62 ANSWER 5 OF 24 USPTAFULL on STN  
AN 2003:312172 USPTAFULL  
TI Methods for genetic analysis of DNA using biased amplification of polymorphic sites  
IN Olson, Jeffrey, Chelmsford, MA, UNITED STATES  
Zillmann, Martin, Shrewsbury, MA, UNITED STATES  
Stanton, Vincent P., JR., Belmont, MA, UNITED STATES  
PA Variagenics, Inc. a Delaware corporation (U.S. corporation)  
PI US 2003219769 A1 20031127  
AI US 2002-287964 A1 20021105 (10)  
RLI Continuation of Ser. No. US 2000-696998, filed on 25 Oct 2000, GRANTED, Pat. No. US 6475736  
PRAI US 2000-206613P 20000523 (60)  
DT Utility  
FS APPLICATION  
LREP ANITA L. MEIKLEJOHN, PH.D., Fish & Richardson P.C., 225 Franklin Street, Boston, MA, 02110-2804  
CLMN Number of Claims: 10  
ECL Exemplary Claim: 1  
DRWN 35 Drawing Page(s)  
LN.CNT 5479

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods for determining genotypes and haplotypes of genes are described. Also described are single nucleotide polymorphisms and haplotypes in the ApoE gene and methods of using that information.

L62 ANSWER 6 OF 24 USPTAFULL on STN  
AN 2003:279079 USPTAFULL  
TI Complex formation between DSDNA and oligomer of cyclic heterocycles  
IN Dervan, Peter B., San Marino, CA, United States  
PA California Institute of Technology, Pasadena, CA, United States (U.S. corporation)  
PI US 6635417 B1 20031021  
AI US 1997-853522 19970508 (8)  
RLI Continuation-in-part of Ser. No. US 1997-837524, filed on 21 Apr 1997,

now patented, Pat. No. US 6143901 Continuation-in-part of Ser. No. US 607078, now patented, Pat. No. US 6090947

PRAI US 1997-38384P 19970214 (60)  
US 1996-26713P 19960925 (60)  
US 1996-24374P 19960801 (60)  
US 1996-23309P 19960731 (60)

DT Utility  
FS GRANTED

EXNAM Primary Examiner: Marschel, Ardin H.  
LREP Warburg, Richard J., Foley & Lardner  
CLMN Number of Claims: 61  
ECL Exemplary Claim: 1  
DRWN 11 Drawing Figure(s); 10 Drawing Page(s)  
LN.CNT 2564

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods and compositions are provided for forming complexes between dsDNA and oligomers of heterocycles, aliphatic amino acids, particularly omega-amino acids, and a polar end group. By appropriate choice of target sequences and composition of the oligomers, complexes are obtained with low dissociation constants. The formation of complexes can be used for identification of specific dsDNA sequences, for inhibiting gene transcription, and as a therapeutic for inhibiting proliferation of undesired cells or expression of undesired genes.

L62 ANSWER 7 OF 24 USPTFULL on STN  
AN 2003:219722 USPTFULL  
TI Biosensors, method for obtaining the same and uses thereof  
IN Renard, Martial, Paris, FRANCE  
Belkadi, Laurent, rue louis Rolland, FRANCE  
England, Patrick, Paris, FRANCE  
Bedouelle, Hugues, Paris, FRANCE  
PI US 2003153012 A1 20030814  
AI US 2002-204431 A1 20020830 (10)  
WO 2001-FR603 20010301  
PRAI FR 2000-2657 20000301  
DT Utility  
FS APPLICATION  
LREP OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C., 1940 DUKE STREET,  
ALEXANDRIA, VA, 22314  
CLMN Number of Claims: 32  
ECL Exemplary Claim: 1  
DRWN 13 Drawing Page(s)  
LN.CNT 1640

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention concerns biosensors, the method for obtaining them and their uses in particular for detecting, assaying or locating, in direct immunofluorescence, a ligand such as an antigen or a hapten, in a heterogeneous population. Said biosensors consist of (i) at least a protein-type receptor fragment, capable of binding with a suitable ligand via an active site and in which fragment, at least one of its amino acid residues, located in the proximity of said active site is naturally present in the form of a Cys residue or is substituted in Cys residue, and (ii) a fluorophore coupled with said Cys residue(s).

L62 ANSWER 8 OF 24 USPTFULL on STN  
AN 2003:140487 USPTFULL  
TI Serine/threonine hydrolase proteins and screening assays

IN Smith, Jeffrey W., San Diego, CA, UNITED STATES  
Kridel, Steven J., San Diego, CA, UNITED STATES  
Axelrod, Fumiko T., San Diego, CA, UNITED STATES  
PI US 2003096328 A1 20030522  
AI US 2002-237271 A1 20020904 (10)  
PRAI US 2001-317842P 20010906 (60)  
DT Utility  
FS APPLICATION  
LREP GARY CARY WARE & FRIENDENRICH LLP, 4365 EXECUTIVE DRIVE, SUITE 1600, SAN  
DIEGO, CA, 92121-2189  
CLMN Number of Claims: 30  
ECL Exemplary Claim: 1  
DRWN 14 Drawing Page(s)  
LN.CNT 2267

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Proteins specific for prostate epithelial cells, normal or neoplastic, are identified and used for diagnosis, development of antibodies, and for evaluating drugs that react with the neoplastic specific proteins. Affinity based probes are used that react specifically with the active site to provide a measure of the enzyme activity of the cells. Prostate epithelial neoplastic cells can be used in screening candidate drugs for their effect in changing the proteome profile as to the serine-threonine hydrolase enzymes, using the affinity based probes for determining the profile.

L62 ANSWER 9 OF 24 USPATFULL on STN

AN 2003:120054 USPATFULL  
TI Methods for genetic analysis of DNA to detect sequence variances  
IN Stanton, Vincent P., JR., Belmont, MA, UNITED STATES  
PI US 2003082537 A1 20030501  
AI US 2001-863733 A1 20010523 (9)  
RLI Continuation-in-part of Ser. No. US 2000-697028, filed on 25 Oct 2000, PENDING Continuation-in-part of Ser. No. US 2000-696998, filed on 25 Oct 2000, PENDING Continuation-in-part of Ser. No. US 2001-967013, filed on 28 Sep 2001, PENDING  
PRAI US 2000-206613P 20000523 (60)  
DT Utility  
FS APPLICATION  
LREP ANITA L. MEIKLEJOHN, PH.D., Fish & Richardson P.C., 225 Franklin Street, Boston, MA, 02110-2804  
CLMN Number of Claims: 72  
ECL Exemplary Claim: 1  
DRWN 43 Drawing Page(s)  
LN.CNT 5382

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods for determing genotypes and haplotypes of genes are described. Also described are single nucleotide polymorphisms and haplotypes in the ApoE gene and methods of using that information.

L62 ANSWER 10 OF 24 USPATFULL on STN

AN 2003:115919 USPATFULL  
TI Preparation and use of bifunctional molecules having DNA sequence binding specificity  
IN Dervan, Peter B., San Marino, CA, United States  
PA California Institute of Technology, Pasadena, CA, United States (U.S. corporation)  
PI US 6555692 B1 20030429

AI US 2001-921514 20010801 (9)  
RLI Continuation of Ser. No. US 1999-414611, filed on 8 Oct 1999, now patented, Pat. No. US 6506906 Continuation-in-part of Ser. No. WO 1998-US6997, filed on 8 Apr 1998 Continuation-in-part of Ser. No. WO 1997-US12722, filed on 21 Jul 1997 Continuation-in-part of Ser. No. US 1997-837524, filed on 21 Apr 1997, now patented, Pat. No. US 6143901 Continuation-in-part of Ser. No. US 1996-607078, filed on 26 Feb 1996, now patented, Pat. No. US 6090947, issued on 18 Jul 2000  
PRAI US 1997-42002P 19970416 (60)  
US 1997-43444P 19970408 (60)  
US 1997-43446P 19970408 (60)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: McKane, Joseph K.; Assistant Examiner: Small, Andrea D.  
LREP Foley & Lardner  
CLMN Number of Claims: 6  
ECL Exemplary Claim: 1  
DRWN 54 Drawing Figure(s); 46 Drawing Page(s)  
LN.CNT 5488  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Novel small molecule polyamides that specifically bind with subnanomolar affinity to a predetermined sequence with potential use in molecular biology and human medicine are described. The designed compounds which target the minor groove of B-form double helical DNA offer a general approach for the control of gene-expression. Simple rules are disclosed which provide for rational control of the DNA-binding sequence specificity of synthetic polyamides containing N-methylpyrrole and N-methylimidazole amino acids. A series of molecular templates for polyamide design are disclosed which provide for small molecules which recognize predetermined DNA sequences with affinities and specificities comparable to sequence-specific DNA-binding proteins. The pyrrole-imidazole polyamides described herein represent a class of designed small molecules that can bind any predetermined sequence of double helical DNA.  
  
L62 ANSWER 11 OF 24 USPATFULL on STN  
AN 2003:106190 USPATFULL  
TI Restriction enzyme genotyping  
IN Olson, Jeffrey, Chelmsford, MA, UNITED STATES  
Zillmann, Martin, Shrewsbury, MA, UNITED STATES  
Stanton, Vincent P., JR., Belmont, MA, UNITED STATES  
PI US 2003073101 A1 20030417  
AI US 2002-116420 A1 20020404 (10)  
RLI Continuation-in-part of Ser. No. US 2001-863733, filed on 23 May 2001, PENDING Continuation-in-part of Ser. No. US 2000-697028, filed on 25 Oct 2000, PENDING Continuation-in-part of Ser. No. US 2000-696998, filed on 25 Oct 2000, PENDING Continuation-in-part of Ser. No. US 2000-697013, filed on 25 Oct 2000, PENDING  
PRAI US 2000-206613P 20000523 (60)  
DT Utility  
FS APPLICATION  
LREP ANITA L. MEIKLEJOHN, PH.D., Fish & Richardson P.C., 225 Franklin Street, Boston, MA, 02110-2804  
CLMN Number of Claims: 13  
ECL Exemplary Claim: 1  
DRWN 45 Drawing Page(s)

LN.CNT 4670

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods for determining genotypes and haplotypes of genes are described.  
Also described are single nucleotide polymorphisms and haplotypes in the  
ApoE gene and methods of using that information.

L62 ANSWER 12 OF 24 USPATFULL on STN

AN 2003:60069 USPATFULL

TI Nucleic acid sequencing using an optically **labeled** pore

IN Russell, Terence S., Braintree, MA, United States

PA LifeBeam Technologies, Inc., Braintree, MA, United States (U.S.  
corporation)

PI US 6528258 B1 20030304

AI US 2000-653046 20000901 (9)

PRAI US 1999-158703P 19991008 (60)

US 1999-152465P 19990903 (60)

DT Utility

FS GRANTED

EXNAM Primary Examiner: Fredman, Jeffrey

LREP Choate, Hall &amp; Stewart, Herschbach Jarrell, Brenda, Baker, C. Hunter

CLMN Number of Claims: 11

ECL Exemplary Claim: 1

DRWN 3 Drawing Figure(s); 3 Drawing Page(s)

LN.CNT 1457

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a system for analyzing polymer molecules  
by detecting their effects on an optical agent. Certain preferred  
embodiments of the invention involve the analysis of polynucleotide  
molecules through detection of their quenching effects on a fluorescent  
reporter.

L62 ANSWER 13 OF 24 USPATFULL on STN

AN 2003:13401 USPATFULL

TI Preparation and use of bifunctional molecules having DNA sequence  
binding specificity

IN Dervan, Peter B., San Marino, CA, United States

PA California Institute of Technology, Pasadena, CA, United States (U.S.  
corporation)

PI US 6506906 B1 20030114

AI US 1999-414611 19991008 (9)

RLI Continuation of Ser. No. WO 1998-US6997, filed on 8 Apr 1998

Continuation-in-part of Ser. No. WO 1997-US12722, filed on 21 Jul 1997

Continuation-in-part of Ser. No. US 1997-853522, filed on 8 May 1997

Continuation-in-part of Ser. No. WO 1997-US3332, filed on 20 Feb 1997

Continuation-in-part of Ser. No. US 1997-837524, filed on 21 Apr 1997

Continuation-in-part of Ser. No. US 1996-607078, filed on 26 Feb 1996

PRAI US 1997-42002P 19970416 (60)

US 1997-43446P 19970408 (60)

US 1997-43444P 19970408 (60)

DT Utility

FS GRANTED

EXNAM Primary Examiner: Lambkin, Deborah C.

LREP Foley &amp; Lardner

CLMN Number of Claims: 8

ECL Exemplary Claim: 1

DRWN 54 Drawing Figure(s); 46 Drawing Page(s)

LN.CNT 5469

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Small molecule polyamides that specifically bind with subnanomolar affinity to any predetermined sequence in the human genome with potential use in molecular biology and human medicine are described. Further, the designed compounds which target the minor groove of B-form double helical DNA offer a general approach for the control of gene-expression. Simple rules are disclosed which provide for rational control of the DNA-binding sequence specificity of synthetic polyamides containing N-methylpyrrole and N-methylimidazole amino acids. A series of molecular templates for polyamide design are disclosed which provide for small molecules which recognize predetermined DNA sequences with affinities and specificities comparable to sequence-specific DNA-binding proteins such as transcription factors. These design rule are applied to provide a polyamide for specific targeting of a predetermined 7 base pair sequence from a conserved HIV gene promoter at subnanomolar concentration. The pyrrole-imidazole polyamides described herein represent the only class of designed small molecules to date that can bind any predetermined sequence of double helical DNA.

L62 ANSWER 14 OF 24 USPATFULL on STN

AN 2002:322488 USPATFULL

TI Proteomic analysis

IN Cravatt, Benjamin F., La Jolla, CA, UNITED STATES  
Sorensen, Erik, San Diego, CA, UNITED STATES  
Patricelli, Matthew P., San Diego, CA, UNITED STATES  
Lovato, Martha, San Diego, CA, UNITED STATES  
Adam, Gregory, San Diego, CA, UNITED STATES

PI US 2002182652 A1 20021205

AI US 2002-158498 A1 20020529 (10)

RLI Division of Ser. No. US 2000-738954, filed on 15 Dec 2000, PENDING

PRAI US 2000-195954P 20000410 (60)

US 2000-212891P 20000620 (60)

US 2000-222532P 20000802 (60)

DT Utility

FS APPLICATION

LREP GARY CARY WARE & FRIENDENRICH LLP, 4365 EXECUTIVE DRIVE, SUITE 1600, SAN DIEGO, CA, 92121-2189.

CLMN Number of Claims: 14

ECL Exemplary Claim: 1

DRWN 24 Drawing Page(s)

LN.CNT 3576

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides methods for analyzing proteomes, as cells or lysates. The analysis is based on the use of probes that have specificity to the active form of proteins, particularly enzymes and receptors. The probes can be identified in different ways. In accordance with the present invention, a method is provided for generating and screening compound libraries that are used for the identification of lead molecules, and for the parallel identification of their biological targets. By appending specific functionalities and/or groups to one or more binding moieties, the reactive functionalities gain binding affinity and specificity for particular proteins and classes of proteins. Such libraries of candidate compounds, referred to herein as activity-based probes, or ABPs, are used to screen for one or more desired biological activities or target proteins.

L62 ANSWER 15 OF 24 USPATFULL on STN

AN 2002:290732 USPATFULL  
TI Methods for genetic analysis of DNA using biased amplification of polymorphic sites  
IN Stanton, Jr., Vincent P., Belmont, MA, United States  
PA Variagenics, Inc., Cambridge, MA, United States (U.S. corporation)  
PI US 6475736 B1 20021105  
AI US 2000-696998 20001025 (9)  
PRAI US 2000-206613P 20000523 (60)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Benzion, Gary; Assistant Examiner: Chunduru, Suryaprabha  
LREP Fish & Richardson, P.C.  
CLMN Number of Claims: 5  
ECL Exemplary Claim: 1  
DRWN 35 Drawing Figure(s); 35 Drawing Page(s)  
LN.CNT 4417  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Methods for determining genotypes and haplotypes of genes are described. Also described are single nucleotide polymorphisms and haplotypes in the ApoE gene and methods of using that information.

## L62 ANSWER 16 OF 24 USPATFULL on STN

AN 2002:283380 USPATFULL  
TI Polyamides for binding in the minor groove of double stranded DNA  
IN Baird, Eldon E., Foster City, CA, United States  
Dervan, Peter B., San Marino, CA, United States  
PA California Institute of Technology, Pasadena, CA, United States (U.S. corporation)  
PI US 6472537 B1 20021029  
AI US 1999-372473 19990811 (9)  
RLI Continuation-in-part of Ser. No. WO 1997-US12722, filed on 21 Jul 1997  
Continuation-in-part of Ser. No. WO 1997-US3332, filed on 20 Feb 1997  
Continuation-in-part of Ser. No. US 1997-853522, filed on 8 May 1997, now abandoned  
Continuation-in-part of Ser. No. US 1997-837524, filed on 21 Apr 1997, now patented, Pat. No. US 6143901  
Continuation-in-part of Ser. No. US 1996-607078, filed on 26 Feb 1996, now patented, Pat. No. US 6090947  
PRAI WO 1998-US1006 19980128  
US 1997-42022P 19970406 (60)  
US 1997-43444P 19970408 (60)  
US 1997-38384P 19970214 (60)  
US 1996-26713P 19960925 (60)  
US 1996-24374P 19960801 (60)  
US 1996-23309P 19960731 (60)  
DT Utility  
FS GRANTED  
EXNAM Primary Examiner: Lambkin, Deborah C.  
LREP Foley & Lardner  
CLMN Number of Claims: 17  
ECL Exemplary Claim: 1  
DRWN 21 Drawing Figure(s); 18 Drawing Page(s)  
LN.CNT 3089  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB The invention encompasses improved polyamides for binding to specific nucleotide sequences in the minor groove of double stranded DNA. The 3-hydroxy-N-methylpyrrole/N-methylpyrrole carboxamide pair specifically



recognizes the T.multidot.A base pair, while the N-methylpyrrole/3-hydroxy-N-methylpyrrole pair recognizes A.multidot.T nucleotide pairs. Similarly, an N-methylimidazole/N-methylpyrrole carboxamide pair specifically recognizes the G.multidot.C nucleotide pair, and the N-methylpyrrole/N-methylimidazole carboxamide pair recognizes the C.multidot.G nucleotide pair.

L62 ANSWER 17 OF 24 USPATFULL on STN  
AN 2002:243068 USPATFULL  
TI Molecular **labeling** and assay systems using poly (amino acid)-metal ion complexes as linkers  
IN Twu, Jesse J., Cupertino, CA, UNITED STATES  
PI US 2002132254 A1 20020919  
AI US 2001-172 A1 20011130 (10)  
PRAI US 2000-250681P 20001130 (60)  
DT Utility  
FS APPLICATION  
LREP KOLISCH HARTWELL DICKINSON MCCORMACK &, HEUSER, 520 S.W. YAMHILL STREET, SUITE 200, PORTLAND, OR, 97204  
CLMN Number of Claims: 45  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Page(s)  
LN.CNT 1092  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Systems, including compositions and methods, for purifying and/or **labeling** proteins or other molecules of interest and/or for assaying the conformational and/or binding states of such molecules. The compositions may include products having the formula

T-P-M-L

where T is a species, M is a metal ion, P is a peptide or protein that binds the metal ion, and L is a luminescent **label**. The methods may include purifying and/or **labeling** a molecule of interest, detecting luminescence energy transfer, detecting dissociation and/or association of a molecule or molecules of interest, detecting a conformational change in a molecule of interest, and detecting an analyte, among others.

L62 ANSWER 18 OF 24 USPATFULL on STN  
AN 2002:126287 USPATFULL  
TI Proteomic analysis  
IN Cravatt, Benjamin F., La Jolla, CA, UNITED STATES  
Sorensen, Erik, San Diego, CA, UNITED STATES  
Patricelli, Matthew P., San Diego, CA, UNITED STATES  
Lovato, Martha, San Diego, CA, UNITED STATES  
Adam, Gregory, San Diego, CA, UNITED STATES  
PA The Scripps Research Institute of an Assignment (U.S. corporation)  
PI US 2002064799 A1 20020530  
AI US 2001-836145 A1 20010416 (9)  
RLI Continuation of Ser. No. US 2000-738271, filed on 15 Dec 2000, PENDING  
PRAI US 2000-195954P 20000410 (60)  
US 2000-212891P 20000620 (60)  
US 2000-222532P 20000802 (60)  
DT Utility  
FS APPLICATION  
LREP Lisa A. Haile, Ph.D., Gray Cary Ware & Freidenrich LLP, Suite 1600, 4365

Executive Drive, San Diego, CA, 92121-2189

CLMN Number of Claims: 13

ECL Exemplary Claim: 1

DRWN 24 Drawing Page(s)

LN.CNT 3602

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides methods for analyzing proteomes, as cells or lysates. The analysis is based on the use of probes that have specificity to the active form of proteins, particularly enzymes and receptors. The probes can be identified in different ways. In accordance with the present invention, a method is provided for generating and screening compound libraries that are used for the identification of lead molecules, and for the parallel identification of their biological targets. By appending specific functionalities and/or groups to one or more binding moieties, the reactive functionalities gain binding affinity and specificity for particular proteins and classes of proteins. Such libraries of candidate compounds, referred to herein as activity-based probes, or ABPs, are used to screen for one or more desired biological activities or target proteins.

L62 ANSWER 19 OF 24 USPATFULL on STN

AN 2002:85189 USPATFULL

TI Human voltage gated sodium channel beta1A subunit and methods of use

IN Qin, Ning, Blue Bell, PA, UNITED STATES

Codd, Ellen, Blue Bell, PA, UNITED STATES

D'Andrea, Michael, Cherry Hill, NJ, UNITED STATES

PI US 2002045229 A1 20020418

AI US 2001-875456 A1 20010606 (9)

PRAI US 2000-294405P 20000607 (60)

DT Utility

FS APPLICATION

LREP AUDLEY A. CIAMPORCERO JR., JOHNSON & JOHNSON, ONE JOHNSON & JOHNSON PLAZA, NEW BRUNSWICK, NJ, 08933-7003

CLMN Number of Claims: 34

ECL Exemplary Claim: 1

DRWN 5 Drawing Page(s)

LN.CNT 2944

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB DNAs encoding human voltage-gated sodium channel .beta.1A subunit have been cloned and characterized. The recombinant protein is capable of forming biologically active protein. The cDNA's have been expressed in recombinant host cells that produce active recombinant protein. The recombinant protein is also purified from the recombinant host cells. In addition, the recombinant host cells are utilized to establish a method for identifying modulators of the receptor activity, and receptor modulators are identified.

L62 ANSWER 20 OF 24 USPATFULL on STN

AN 2002:85154 USPATFULL

TI Proteomic analysis

IN Cravatt, Benjamin F., La Jolla, CA, UNITED STATES

Sorensen, Erik, San Diego, CA, UNITED STATES

Patricelli, Matthew P., San Diego, CA, UNITED STATES

Lovato, Martha, San Diego, CA, UNITED STATES

Adam, Gregory, San Diego, CA, UNITED STATES

PI US 2002045194 A1 20020418

AI US 2000-738954 A1 20001215 (9)

PRAI US 2000-195954P 20000410 (60)  
US 2000-212891P 20000620 (60)  
US 2000-222532P 20000802 (60)  
DT Utility  
FS APPLICATION  
LREP Lisa A. Haile, Ph.D., Gray Cary Ware & Freidenrich LLP, Suite 1600, 4365  
Executive Drive, San Diego, CA, 92121-2189  
CLMN Number of Claims: 31  
ECL Exemplary Claim: 1  
DRWN 24 Drawing Page(s)  
LN.CNT 3728

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides methods for analyzing proteomes, as cells or lysates. The analysis is based on the use of probes that have specificity to the active form of proteins, particularly enzymes and receptors. The probes can be identified in different ways. In accordance with the present invention, a method is provided for generating and screening compound libraries that are used for the identification of lead molecules, and for the parallel identification of their biological targets. By appending specific functionalities and/or groups to one or more binding moieties, the reactive functionalities gain binding affinity and specificity for particular proteins and classes of proteins. Such libraries of candidate compounds, referred to herein as activity-based probes, or ABPs, are used to screen for one or more desired biological activities or target proteins.

L62 ANSWER 21 OF 24 USPATFULL on STN

AN 2001:178816 USPATFULL  
TI Complex formation between dsDNA and oligomer of cyclic heterocycles  
IN Dervan, Peter B., San Marino, CA, United States  
Gottesfeld, Joel M., Del Mar, CA, United States  
PA California Institute of Technology, Pasadena, CA, United States (U.S. corporation)  
The Scripps Research Institute, La Jolla, CA, United States (U.S. corporation)  
PI US 6303312 B1 20011016  
AI US 1999-434290 19991105 (9)  
RLI Continuation of Ser. No. US 1997-853525, filed on 8 May 1997, now patented, Pat. No. US 5998140 Continuation-in-part of Ser. No. US 1997-837524, filed on 21 Apr 1997 Continuation-in-part of Ser. No. US 607078

PRAI US 1996-23309P 19960731 (60)  
US 1996-24374P 19960801 (60)  
US 1996-26713P 19960925 (60)  
US 1997-38384P 19970214 (60)

DT Utility  
FS GRANTED

EXNAM Primary Examiner: Houtteman, Scott W.  
LREP Morrison & Foerster LLP  
CLMN Number of Claims: 19  
ECL Exemplary Claim: 1  
DRWN 4 Drawing Figure(s); 4 Drawing Page(s)  
LN.CNT 2156

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods and compositions are provided for forming complexes intracellularly between dsDNA and oligomers of heterocycles, aliphatic amino acids, particularly omega-amino acids, and a polar end group. By

appropriate choice of target sequences and composition of the oligomers, complexes are obtained with low dissociation constants. The formation of complexes can be used for modifying the phenotype of cells, either prokaryotic or eukaryotic, for research and therapy.

L62 ANSWER 22 OF 24 USPATFULL on STN  
AN 2001:32756 USPATFULL  
TI Photoluminescent sensors of chemical analytes  
IN Thompson, Richard B., Baltimore, MD, United States  
Felliccia, Vincent L., Arnold, MD, United States  
Maliwal, Badri P., Baltimore, MD, United States  
Fierke, Carol A., Durham, NC, United States  
PA University of Maryland, Baltimore, Baltimore, MD, United States (U.S. corporation)  
PI US 6197258 B1 20010306  
AI US 1999-273303 19990319 (9)  
RLI Continuation-in-part of Ser. No. US 1998-71351, filed on 30 Apr 1998  
Continuation-in-part of Ser. No. US 1996-736904, filed on 25 Oct 1996, now patented, Pat. No. US 5952236, issued on 14 Sep 1999  
PRAI US 1998-78597P 19980319 (60)  
US 1998-83868P 19980501 (60)  
DT Utility  
FS Granted  
EXNAM Primary Examiner: Soderquist, Arlen  
LREP Smith, Chalin A., Marks, David L.  
CLMN Number of Claims: 6  
ECL Exemplary Claim: 1  
DRWN 46 Drawing Figure(s); 44 Drawing Page(s)  
LN.CNT 1830  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB The invention described in detail herein relates to the detection, determination, and quantitation of certain ions and small molecules in solution. The invention specifically relates to improvements in the area of photoluminescent sensors for use in a detection scheme involving the alteration of a photoluminescent **label** or moiety attached to or associated with an analyte binding macromolecule. One may use the changes in photoluminescence lifetime, changes in ratios of photoluminescence intensity or changes in photoluminescence polarization (anisotropy) to determine the analyte. The photoluminescence change measured correlates to the concentration of the ion or molecule in solution.

L62 ANSWER 23 OF 24 USPATFULL on STN  
AN 2000:150318 USPATFULL  
TI Complex formation between dsDNA and pyrrole imidazole polyamides  
IN Dervan, Peter B., San Marino, CA, United States  
PA Genesoft, Inc., South San Francisco, CA, United States (U.S. corporation)  
PI US 6143901 20001107  
AI US 1997-837524 19970421 (8)  
RLI Continuation-in-part of Ser. No. US 607708  
PRAI US 1996-23309P 19960731 (60)  
US 1996-24374P 19960801 (60)  
US 1996-26713P 19960925 (60)  
US 1997-38384P 19970214 (60)  
DT Utility  
FS Granted

EXNAM Primary Examiner: Higel, Floyd D.  
CLMN Number of Claims: 35  
ECL Exemplary Claim: 1  
DRWN 3 Drawing Figure(s); 2 Drawing Page(s)  
LN.CNT 2668

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods and compositions are provided for forming complexes between dsDNA and oligomers of heterocycles, aliphatic amino acids, particularly omega-amino acids, and a polar end group. By appropriate choice of target sequences and composition of the oligomers, complexes are obtained with low dissociation constants. The formation of complexes can be used for identification of specific dsDNA sequences, for inhibiting gene transcription, and as a therapeutic for inhibiting proliferation of undesired cells or expression of undesired genes.

L62 ANSWER 24 OF 24 USPATFULL on STN

AN 1999:159756 USPATFULL

TI Complex formation between dsDNA and oligomer of cyclic heterocycles

IN Dervan, Peter B., San Marino, CA, United States

Gottesfeld, Joel M., Del Mar, CA, United States

PA The Scripps Research Institute, La Jolla, CA, United States (U.S. corporation)

California Institute of Technology, Pasadena, CA, United States (U.S. corporation)

PI US 5998140 19991207

AI US 1997-853525 19970508 (8)

RLI Continuation-in-part of Ser. No. US 1997-837524, filed on 21 Apr 1997 which is a continuation-in-part of Ser. No. US 607078

PRAI US 1996-23309P 19960731 (60)

US 1996-24374P 19960801 (60)

US 1996-26713P 19960925 (60)

US 1997-38384P 19970214 (60)

DT Utility

FS Granted

EXNAM Primary Examiner: Houtteman, Scott W.

LREP Morrison & Foerster, LLP

CLMN Number of Claims: 53

ECL Exemplary Claim: 1

DRWN 5 Drawing Figure(s); 4 Drawing Page(s)

LN.CNT 2385

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Methods and compositions are provided for forming complexes intracellularly between dsDNA and oligomers of heterocycles, aliphatic amino acids, particularly omega-amino acids, and a polar end group. By appropriate choice of target sequences and composition of the oligomers, complexes are obtained with low dissociation constants. The formation of complexes can be used for modifying the phenotype of cells, either prokaryotic or eukaryotic, for research and therapy.

=&gt; d que

L47 3975 SEA FILE=WPIX ABB=ON PLU=ON HISTIDINE OR POLYHISTIDINE  
 L48 173850 SEA FILE=WPIX ABB=ON PLU=ON NI OR NICKEL  
 L49 4834 SEA FILE=WPIX ABB=ON PLU=ON LUMINOPHOR? OR FLUOROPHOR? OR  
 XANTHEN? ORE FLUORESCIEIN OR ROSAMINE OR RHODAMINE OR RHODOL OR  
 CASCADE BLUE OR BENZOBODIP? OR TEXAS RED  
 L51 4 SEA FILE=WPIX ABB=ON PLU=ON L47 AND L48 AND L49

=&gt; d bib abs 1-4

L51 ANSWER 1 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN  
 AN 2002-599564 [64] WPIX  
 DNC C2002-169388  
 TI New aminoacid derivatives, useful for labeling, oligomerizing or  
 immobilizing proteins, comprise covalently bonded metal chelating agent  
 for coordinative interaction with an aminoacid.  
 DC B04 B05  
 IN TAMPE, R  
 PA (TAMP-I) TAMPE R  
 CYC 100  
 PI WO 2002051794 A2 20020704 (200264)\* DE 55p  
 RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
 NL OA PT SD SE SL SZ TR TZ UG ZM ZW  
 W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
 DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
 KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT  
 RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM  
 ZW  
 DE 10064896 A1 20020711 (200264)  
 ADT WO 2002051794 A2 WO 2001-EP15210 20011221; DE 10064896 A1 DE 2000-10064896  
 20001223  
 PRAI DE 2000-10064896 20001223  
 AN 2002-599564 [64] WPIX  
 AB WO 200251794 A UPAB: 20021007  
 NOVELTY - Aminoacid derivatives (I), comprising a covalently bonded metal  
 chelating agent (II) suitable for coordinative interaction with an  
 aminoacid (specifically **histidine**), are new.  
 DETAILED DESCRIPTION - Aminoacid derivatives of formula (I),  
 comprising a covalently bonded metal chelating agent (II) suitable for  
 coordinative interaction with an aminoacid (specifically **histidine**  
 ), and their amino-and/or carboxy-protected derivatives are new.  
 n, m = 0-5; and  
 R = side-chain.  
 INDEPENDENT CLAIMS are included for:  
 (1) Polypeptides (A) containing (I); and  
 (2) Protein complexes (B), comprising:  
 (i) a polypeptide (A);  
 (ii) at least one cation complexed with (I); and  
 (iii) a second polypeptide containing at least one **histidine**  
 USE - Use of (A) is claimed for labeling proteins (specifically  
 intracellular proteins), dimerization and/or oligomerization of proteins  
 (specifically where (A) is covalently bonded to a cysteine residue in the  
 protein to be dimerized or oligomerized) or for controlled immobilization  
 of proteins on surfaces (specifically for structured assembly of proteins

on surfaces using screen probe microscopic techniques).

More generally residues of the aminoacids (I) act as connectable biochemical pincers and synthetic receptors for molecular organization and manipulation of biomolecules. Typical applications are in nano-biotechnology, functional protein analysis, protein chips, biosensors, high throughput screening, drug screening, functional surface layers and protein assays.

ADVANTAGE - (A) interacts with the binding partners specifically and with high affinity, and allows reliable and predictable elution.  
Dwg.0/14

L51 ANSWER 2 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN  
AN 2002-154968 [20] WPIX  
DNN N2002-117782 DNC C2002-048538  
TI Identifying substances for use as P2Y receptor agonists or antagonists, comprises contacting the receptor with a test substance in a cell-free system and measuring the interaction or effect of the substance on a sample.  
DC B04 D16 S03  
IN BLAESIUS, R; HARDEN, T K; NICHOLAS, R; WALDO, G L; BALESIUS, R  
PA (UYNC-N) UNIV NORTH CAROLINA; (BLAE-I) BLAESIUS R; (HARD-I) HARDEN T K; (NICH-I) NICHOLAS R; (WALD-I) WALDO G L  
CYC 96  
PI WO 2002004955 A2 20020117 (200220)\* EN 50p  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD  
SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
AU 2001073243 A 20020121 (200234)  
EP 1301792 A2 20030416 (200328) EN  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT  
RO SE SI TR  
US 2003175810 A1 20030918 (200362)  
NZ 523523 A 20031031 (200380)  
ADT WO 2002004955 A2 WO 2001-US21467 20010706; AU 2001073243 A AU 2001-73243  
20010706; EP 1301792 A2 EP 2001-952501 20010706, WO 2001-US21467 20010706;  
US 2003175810 A1 Provisional US 2000-216618P 20000707, Cont of WO  
2001-US21467 20010706, US 2003-336608 20030103; NZ 523523 A NZ 2001-523523  
20010706, WO 2001-US21467 20010706  
FDT AU 2001073243 A Based on WO 2002004955; EP 1301792 A2 Based on WO  
2002004955; NZ 523523 A Based on WO 2002004955  
PRAI US 2000-216618P 20000707; US 2003-336608 20030103  
AN 2002-154968 [20] WPIX  
AB WO 200204955 A UPAB: 20020402  
NOVELTY - Screening (M1) candidate substances (CS) for an ability to  
modulate P2Y receptor-promoted biological activity, by:  
(a) contacting a test sample comprising a pure P2Y receptor, with  
candidate substances; and  
(b) measuring an interaction, effect or their combination, of the  
substances on test sample, to determine ability of the substance to  
modulate P2Y receptor-promoted biological activity.  
DETAILED DESCRIPTION - Screening (M1) candidate substances (CS) for  
an ability to modulate P2Y receptor-promoted biological activity, by:  
(a) contacting a test sample comprising a pure P2Y receptor, with  
candidate substances; and

(b) measuring an interaction, effect or their combination, of the substances on test sample, to determine ability of the substance to modulate P2Y receptor-promoted biological activity.

In an alternative method, M1 comprises:

(a) establishing replicate test and control samples that comprise a pure biologically active P2Y receptor (G protein coupled receptor for extracellular nucleotides that have been shown to be functional receptors) polypeptide, administering a candidate substance to the test sample but not the control sample, measuring the activity of P2Y receptor-promoted biological activity in the test and control samples, and determining that the candidate substance modulates P2Y receptor-promoted biological activity if a level of P2Y receptor-promoted activity measured for the test sample is greater or less than the level of P2Y receptor-promoted biological activity measured for the control sample; or

(b) establishing a control system comprising a ligand and a P2Y receptor capable of binding to the ligand, establishing a test system comprising a P2Y receptor, a ligand and a candidate compound, measuring binding affinity of a P2Y receptor and a ligand in the control and the test systems, and determining that the candidate compound modulates P2Y receptor-promoted activity in a cell-free system if the binding affinity measured for the test system is less than or greater than the binding affinity measured for the control system.

INDEPENDENT CLAIMS are also included for the following:

(1) a cell-free system for the study of P2Y receptors, comprising a P2Y receptor, a vesicle, and optionally a protein that normally interacts with the P2Y receptor in nature; and

(2) producing (M2) a cell-free system for the assay of P2Y receptor-promoted activity, by:

(a) purifying a P2Y receptor;

(b) purifying a protein that normally interacts with the P2Y receptor in nature;

(c) reconstituting the P2Y receptor into a vesicle; and

(d) optionally reconstituting the protein into the vesicle to produce the cell-free system.

USE - M1 is useful for screening candidate substances for the ability to modulate P2Y receptor-promoted biological activity including hydrolysis of NTP molecules to NDP molecules, formation of NTP molecules from NDP molecules, modulation of intracellular calcium levels, modulation of phospholipase C activity, modulation of adenylate cyclase activity, translocation of RhoA (a small GTP-binding protein that controls reorganization of the actin cytoskeleton and activates transcription factors in response to extracellular agonists) to membranes, formation of a network of stress fibers, phosphorylation of myosin light chains, cell differentiation modulation of NTPase activity, shape change in platelets and their combinations. M2 is useful for producing a cell-free system for the assay of P2Y receptor-promoted activity (claimed).

ADVANTAGE - The cell-free system eliminates contaminating protein and non-specific binding. The elimination of contaminants enhances the signal to noise ratio of the assay. Thus, due to low degree of background signal even weak binding events and low level activities can be accurately detected and quantified.

Dwg.0/5

L51 ANSWER 3 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2001-211359 [21] WPIX

DNN N2001-150986 DNC C2001-062914

TI High-speed nucleic acid sequencing by primer extension, useful e.g. for



diagnosis, uses polymerase and nucleotides that are both labeled with **fluorophores**.

DC B04 D16 S03

IN RUBENS, D; SCHNEIDER, T D

PA (USSH) US DEPT HEALTH & HUMAN SERVICES

CYC 94

PI WO 2001016375 A2 20010308 (200121)\* EN 40p

RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TZ UG ZW

W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

AU 2000070868 A 20010326 (200137)

ADT WO 2001016375 A2 WO 2000-US23736 20000829; AU 2000070868 A AU 2000-70868  
20000829

FDT AU 2000070868 A Based on WO 2001016375

PRAI US 1999-151580P 19990830

AN 2001-211359 [21] WPIX

AB WO 200116375 A UPAB: 20010418

NOVELTY - Sequencing a nucleic acid (I) by treatment with an oligonucleotide probe (OP), polymerase (P) and a mixture of nucleotides (NTP), with NTP and P each labeled with **fluorophores** that generate a signal characteristic of a particular NTP as this is incorporated into the complement of (I) being formed. This signal is detected as NTP is incorporated.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a substrate to which a GFP-polymerase (GFP = green fluorescent protein) is attached; and

(b) device for sequencing (I) comprising a substrate to which P (labeled with a donor **fluorophore**), OP and (I) are attached; system for viewing P; system for detecting a signal from an acceptor **fluorophore** carried by an NTP, as this is incorporated into the complementary strand being formed; source of light that excites the donor, but not the acceptor, and a decoder for converting a sequence of signals into a nucleic acid sequence.

USE - The method is used to sequence (I) for research or diagnostic purposes.

ADVANTAGE - This method does not require electrophoresis or complex pumping systems; does not result in shearing of (I) and is suitable for automated sequencing of many (e.g. 1000) (I) simultaneously, allowing sequencing speeds as high as 360 bases /hr.

DESCRIPTION OF DRAWING(S) - Diagram of a system where the polymerase is attached to a support.

Polymerase 10

Support 12

Linker 14

Nucleic acid being sequenced 16

Primer 18

Nucleotides 20

**fluorophore** 22

Dwg. 1A/3

L51 ANSWER 4 OF 4 WPIX COPYRIGHT 2004 THOMSON DERWENT on STN

AN 2000-302953 [26] WPIX

DNN N2000-226397 DNC C2000-091754

TI New particulate label comprising two signal generating moieties bound to a particulate support, useful for homogenous assays for analyte concentration and for assessing component reactivity.

DC B04 D16 S03

IN KAUVAR, L M; SEDAT, J

PA (TREL-N) TRELLIS BIOINFORMATICS INC; (KAUV-I) KAUVAR L M; (SEDA-I) SEDAT J; (TREL-N) TRELLIS BIOSCIENCE INC

CYC 24

PI WO 2000014545 A1 20000316 (200026)\* EN 37p  
RW: AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
W: AU CA IL JP  
AU 9957908 A 20000327 (200032)  
EP 1110090 A1 20010627 (200137) EN  
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  
US 2001031464 A1 20011018 (200166)  
US 2001044116 A1 20011122 (200176)  
JP 2002524739 W 20020806 (200266) 42p  
US 6492125 B2 20021210 (200301)  
US 6642062 B2 20031104 (200374)

ADT WO 2000014545 A1 WO 1999-US19708 19990830; AU 9957908 A AU 1999-57908 19990830; EP 1110090 A1 EP 1999-945277 19990830; WO 1999-US19708 19990830; US 2001031464 A1 US 1998-146984 19980903; US 2001044116 A1 CIP of US 1998-146984 19980903, US 1999-332613 19990614; JP 2002524739 W WO 1999-US19708 19990830, JP 2000-569238 19990830; US 6492125 B2 CIP of US 1998-146984 19980903, US 1999-332613 19990614; US 6642062 B2 US 1998-146984 19980903

FDT AU 9957908 A Based on WO 2000014545; EP 1110090 A1 Based on WO 2000014545; JP 2002524739 W Based on WO 2000014545

PRAI US 1999-332613 19990614; US 1998-146984 19980903

AN 2000-302953 [26] WPIX

AB WO 200014545 A UPAB: 20000531  
NOVELTY - A particulate label (I) is new and comprises a particulate support to which is bound at least two signal generating moieties in a predetermined amount and ratio which in situ generates a signal different from that generated by the other(s) and where the signals can be varied over a series of graduations.  
DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:  
(1) a collection of (I) comprising multiplicities of (I) having different ratios and/or amounts of the signal-generating moieties so each label has a different hue;  
(2) a method for assessing a sample for its constituent components comprising contacting the sample with the collection of (I) and determining which labels are bound and which labels are not bound by the sample;  
(3) a system for the detection of an interaction between a multiplicity of reagents and at least one target which system comprises the collection of (I) with a detection means for each different wavelength band of color generating moiety;  
(4) a method to follow the course of a network of physiological pathways comprising contacting a series of end points of the pathways with the matrix and observing the progress of the labels from each position in the matrix; and  
(5) a method for assessing the interaction of a first library of compounds with a second library containing potentially compounds which are opposite members of specific binding pairs with compounds contained in the first library comprising providing coupled members of the first library to

(I) so that each member of the library is coupled to a label with a signal different from the other members of the library, providing coupled members of the second library to (I) so that each member of the second library is coupled to a label with a signal different from the other members of the library; where the labels in the first library are substantially larger in size than the labels of the second library, contacting the first labelled library with the second labelled library and observing the formation of rosettes.

USE - The particulate label (I) is useful for assays where multiple reactivities need to be observed. (I) is also useful in a system for assessing the reactivity of a sample with a multiplicity of reagents coupled to labels and collections of (I) are useful for labels in library versus library screening. (I) of different sizes can be used as a basis for homogenous assays for analyte concentration in a competitive binding format or for affinity titrations by displacement of unlabeled analyte from larger particulates by competition from analyte analogs coupled to labelled smaller beads. (I) is also useful in methods for assessing the reactivity of components in a sample using the assay system. The nature of the reagent depends on the nature of the application, e.g. antibodies are useful in tissue typing and other diagnostic assays, peptide generated from cDNA libraries are useful in assessing receptor binding, oligonucleotides are useful in assays based on complementary chain hybridization.

ADVANTAGE - It is possible to locate the position of any specific particulate or group of particulates within the sample. Also if each label is coupled to a different reagent then the collection of (I) can be used to run multiple assays at once as each particle can be identified by the hue of light that it generates.

Dwg.0/7

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L1 2 SEA FILE=REGISTRY ABB=ON PLU=ON HISTIDINE/CN  
 L2 2 SEA FILE=REGISTRY ABB=ON PLU=ON POLYHISTIDINE/CN  
 L3 1 SEA FILE=REGISTRY ABB=ON PLU=ON NICKEL/CN  
 L4 6 SEA FILE=REGISTRY ABB=ON PLU=ON (ROSAMINE/CN OR "ROSAMINE  
 (ALKALOID)"/CN OR "ROSAMINE (DYE)"/CN OR "ROSAMINE 1"/CN OR  
 "ROSAMINE 5"/CN OR "ROSAMINE 6"/CN OR "ROSAMINE, TETRADEMETHYL  
 ETRAETHYL-"/CN)  
 L5 3 SEA FILE=REGISTRY ABB=ON PLU=ON (RHODOL/CN OR "RHODOL  
 (FLUORAN DERIVATIVE)"/CN OR "RHODOL GREEN"/CN)  
 L6 9 SEA FILE=REGISTRY ABB=ON PLU=ON ("CASCADE BLUE"/CN OR  
 "CASCADE BLUE ACETYL AZIDE"/CN OR "CASCADE BLUE CADAVERINE"/CN  
 OR "CASCADE BLUE ETHYLENEDIAMINE TRISODIUM SALT"/CN OR  
 "CASCADE BLUE HYDRAZIDE"/CN OR "CASCADE BLUE HYDRAZIDE  
 TRIPOTASSIUM SALT"/CN OR "CASCADE BLUE HYDRAZIDE TRISODIUM  
 SALT"/CN OR "CASCADE BLUE-7-UTP"/CN)  
 L7 8 SEA FILE=REGISTRY ABB=ON PLU=ON TEXAS RED?/CN  
 L8 33027 SEA FILE=HCAPLUS ABB=ON PLU=ON L-HISTIDINE/CT  
 L9 33760 SEA FILE=HCAPLUS ABB=ON PLU=ON L1 OR L2 OR L8  
 L10 290800 SEA FILE=HCAPLUS ABB=ON PLU=ON NICKEL/CT  
 L11 775862 SEA FILE=HCAPLUS ABB=ON PLU=ON L3 OR L10 OR NI OR NICKEL  
 L12 4330 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUORESCENT BRIGHTENERS+OLD/CT  
 L13 45579 SEA FILE=HCAPLUS ABB=ON PLU=ON LUMINESCENT SUBSTANCES+OLD,NT/  
 CT  
 L14 20694 SEA FILE=HCAPLUS ABB=ON PLU=ON PHOSPHORS+NT/CT  
 L15 47353 SEA FILE=HCAPLUS ABB=ON PLU=ON LUMINOPHOR? OR L12 OR L13 OR  
 L14  
 L16 8030 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUOROPHOR?  
 L17 4513 SEA FILE=HCAPLUS ABB=ON PLU=ON XANTHENE  
 L18 6929 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUORESCEIN+NT/CT  
 L19 23090 SEA FILE=HCAPLUS ABB=ON PLU=ON L18 OR FLUORESCEIN  
 L20 75 SEA FILE=HCAPLUS ABB=ON PLU=ON L4 OR ROSAMINE  
 L21 10519 SEA FILE=HCAPLUS ABB=ON PLU=ON RHODAMINE/OBI  
 L22 668 SEA FILE=HCAPLUS ABB=ON PLU=ON RHODOL/OBI OR L5  
 L23 170 SEA FILE=HCAPLUS ABB=ON PLU=ON L6 OR CASCADE BLUE/OBI  
 L26 605 SEA FILE=HCAPLUS ABB=ON PLU=ON L7 OR TEXAS RED/OBI  
 L27 88005 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 OR L16 OR L17 OR L19 OR  
 L20 OR L21 OR L22 OR L23 OR L26  
 L37 1 SEA FILE=REGISTRY ABB=ON PLU=ON "NICKEL ION(2+)"/CN  
 L41 776809 SEA FILE=HCAPLUS ABB=ON PLU=ON L37 OR L11  
 L43 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND L41 AND L27  
 L44 16 SEA FILE=HCAPLUS ABB=ON PLU=ON L43 AND PROTEIN/OBI  
 L45 21 SEA FILE=HCAPLUS ABB=ON PLU=ON L43 OR L44

=&gt; d 145 ibib ab hitind hitstr 1-21

L45 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2003:875484 HCAPLUS  
 DOCUMENT NUMBER: 139:361233  
 TITLE: Bis-transition-metal-chelate-probes  
 INVENTOR(S): Ebright, Richard H.; Ebright, Yon W.  
 PATENT ASSIGNEE(S): Rutgers, the State of University of New Jersey, USA  
 SOURCE: PCT Int. Appl., 80 pp.  
 CODEN: PIXXD2

DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003091689	A2	20031106	WO 2002-US36180	20021112
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

PRIORITY APPLN. INFO.: US 2002-367775P P 20020328  
 US 2002-410267P P 20020913

OTHER SOURCE(S): MARPAT 139:361233

AB A probe for labeling a target material is provided including two transition-metal chelates and detectable group. The probe has the general structural formula (I) wherein: (a) Y and Y' are each a transition metal, (b) R1 and R1 are each independently CH(COO-), CH(COOH), or absent; (c) R2 and R2 are linkers each having a length of from about 3.0 to about 20 Å; and (d) X is a detectable group. The linkers may be linear or branched, may contain arom. moieties, and may optionally be further substituted. Methods of use of the probe in detecting and analyzing target materials of interest also are provided.

IC ICM G01N

CC 9-16 (Biochemical Methods)

IT **Proteins**

RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)

(-protein binding; bis-transition-metal-chelate-probes)

IT Transcription factors

RL: BSU (Biological study, unclassified); BIOL (Biological study)

(CAP (catabolite gene activator **protein**), hexahistidine tagged; bis-transition-metal-chelate-probes)

IT Self-association

(**Protein**; bis-transition-metal-chelate-probes)

IT Affinity

Alkyl groups

Animal tissue

Aryl groups

Biological materials

Capillary tubes

Carboxyl group

Cell

Chelating agents

Chemical formula

Chromophores

Concentration (condition)

Conformational transition

Coupling reaction

Crosslinking agents  
 Cuvettes  
 Cyanine dyes  
 Fluorescence  
 Fluorescence quenching  
 Fluorescence resonance energy transfer  
     **Fluorescent dyes**  
     **Fluorescent substances**  
 Gels  
 Immobilization, molecular or cellular  
 Isotope indicators  
 Labels  
 Length  
 Linking agents  
     **Luminescent substances**  
 Materials  
 Membrane, biological  
 Methyl group  
 Microtiter plates  
 Molecules  
 NMR spectroscopy  
 Optical absorption  
 Organ, animal  
     **Phosphorescent substances**  
     **Protein sequences**  
 Reaction  
 Solids  
 Solutions  
 Spin labels  
 Surface  
 Synthesis  
 Synthons  
 Tautomers  
 Test kits  
 Test tubes  
 Washing  
     (bis-transition-metal-chelate-probes)  
 IT Peptides, analysis  
     **Proteins**  
 Transition metal compounds  
 RL: ANT (Analyte); ANST (Analytical study)  
     (bis-transition-metal-chelate-probes)  
 IT **71-00-1D**, Histidine, compds. contg. 64134-30-1  
 RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant  
 or reagent)  
     (bis-transition-metal-chelate-probes)  
 IT 64-19-7D, Acetic acid, probes contg., uses 7704-34-9D, Sulfur, probes  
 contg. 7782-44-7D, Oxygen, probes contg. **14701-22-5D**, probes  
 contg., uses 15158-11-9D, probes contg., uses 22541-53-3D, probes  
 contg., uses 23713-49-7D, Zincion, probes contg., uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
     (bis-transition-metal-chelate-probes)  
 IT 50-00-0, Formaldehyde, reactions 90-47-1, Xanthenone 92-83-1,  
**Xanthene** 95-21-6, 2-Methylbenzoxazole 109-06-8,  
 2-Methylpyridine 120-75-2, 2-Methylbenzothiazole 135-67-1, Phenoxazine  
 1640-39-7, 2,3,3-Trimethylindole 2143-61-5, Propyl 2682-45-3  
 4808-69-9 6764-43-8 7718-54-9, **Nickel** chloride (NiCl<sub>2</sub>),

reactions 20686-66-2 21431-16-3 41532-84-7 113995-55-4  
129179-17-5 132557-72-3 146368-15-2 146397-20-8 157646-47-4  
618886-23-0

RL: RCT (Reactant); RACT (Reactant or reagent)  
(bis-transition-metal-chelate-probes)

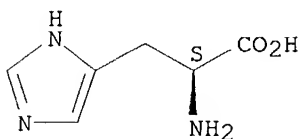
IT 71-00-1D, Histidine, compds. contg.

RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)  
(bis-transition-metal-chelate-probes)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 14701-22-5D, probes contg., uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(bis-transition-metal-chelate-probes)

RN 14701-22-5 HCAPLUS

CN Nickel, ion (Ni2+) (8CI, 9CI) (CA INDEX NAME)

Ni<sup>2+</sup>

L45 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2003:326006 HCAPLUS

DOCUMENT NUMBER: 139:161341

TITLE: A green fluorescent chemosensor for amino acids  
provides a versatile high-throughput screening (HTS)  
assay for proteases

AUTHOR(S): Dean, Kathryn E. S.; Klein, Gerard; Renaudet, Olivier;  
Reymond, Jean-Louis

CORPORATE SOURCE: Department of Chemistry & Biochemistry, University of  
Bern, Bern, 3012, Switz.

SOURCE: Bioorganic & Medicinal Chemistry Letters (2003),  
13(10), 1653-1656

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The water sol. **fluorescein**-based ligand 1 forms a  
non-fluorescent complex with Cu<sup>2+</sup>. This complex serves as a fluorescent  
sensor for amino acids in the 10<sup>-3</sup> M concn. range. Since the signal  
response is very fast, the sensor can be used to detect the hydrolytic  
activity of various proteases (trypsin, chymotrypsin, subtilisin) on  
bovine serum albumin as a whole protein substrate, and more generally to  
follow reactions releasing or removing free amino acids, in real time.

CC 7-1 (Enzymes)

Section cross-reference(s): 9

IT **Fluorescent indicators**

High throughput screening

(calcein.cntdot.Cu2+ complex for fluorescence detection of free Cu2+-ligating amino acids and peptides and as a versatile high-throughput screening (HTS) assay for proteases)

IT 52-90-4, L-Cysteine, analysis 56-40-6, Glycine, analysis 56-41-7, L-Alanine, analysis 56-45-1, L-Serine, analysis 60-00-4, EDTA, analysis 61-90-5, L-Leucine, analysis 63-68-3, L-Methionine, analysis 65-82-7, N-Acetylmethionine **71-00-1**, L-Histidine, analysis 72-18-4, L-Valine, analysis 107-95-9, .beta.-Alanine 9001-73-4, Papain 9001-75-6, Pepsin 9001-92-7, Protease 9002-07-7, Trypsin 9004-06-2, Elastase 9004-07-3, .alpha.-Chymotrypsin 9012-37-7, Acylase I 9014-01-1, Subtilisin 9031-94-1, Aminopeptidase 9073-78-3, Thermolysin 13079-20-4, Leucinamide

RL: ANT (Analyte); ANST (Analytical study)

(calcein.cntdot.Cu2+ complex for fluorescence detection of free Cu2+-ligating amino acids and peptides and as a versatile high-throughput screening (HTS) assay for proteases)

IT **14701-22-5, Nickel(2+)**, processes 22541-53-3, Cobalt(2+), processes

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)

(quenching of calcein fluorescence; calcein.cntdot.Cu2+ complex for fluorescence detection of free Cu2+-ligating amino acids and peptides and as a versatile high-throughput screening (HTS) assay for proteases)

IT **71-00-1**, L-Histidine, analysis

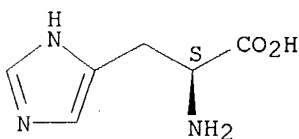
RL: ANT (Analyte); ANST (Analytical study)

(calcein.cntdot.Cu2+ complex for fluorescence detection of free Cu2+-ligating amino acids and peptides and as a versatile high-throughput screening (HTS) assay for proteases)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).

IT **14701-22-5, Nickel(2+)**, processes

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)

(quenching of calcein fluorescence; calcein.cntdot.Cu2+ complex for fluorescence detection of free Cu2+-ligating amino acids and peptides and as a versatile high-throughput screening (HTS) assay for proteases)

RN 14701-22-5 HCAPLUS

CN Nickel, ion (Ni2+) (8CI, 9CI) (CA INDEX NAME)

Ni2+

REFERENCE COUNT:

19

THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT



L45 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2002:466603 HCAPLUS  
 DOCUMENT NUMBER: 137:30231  
 TITLE: Fluorescence-polarization assays using polyions and  
 application to enzyme and nucleic acid assays  
 INVENTOR(S): Nikiforov, Theo T.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S. Pat. Appl. Publ., 47 pp., Cont.-in-part of U.S.  
 6,287,774.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002076697	A1	20020620	US 2000-569193	20000511
US 6472141	B2	20021029		
US 6287774	B1	20010911	US 1999-316447	19990521
CN 1130564	B	20031210	CN 2000-807851	20000511
US 6436646	B1	20020820	US 2000-727532	20001128
US 2002146703	A1	20021010	US 2001-865044	20010524
ZA 2001009192	A	20021107	ZA 2001-9192	20011107
US 2002197619	A1	20021226	US 2002-57812	20020124
US 6689565	B2	20040210		
US 2003175815	A1	20030918	US 2003-397887	20030326
US 2004033531	A1	20040219	US 2003-609012	20030627

## PRIORITY APPLN. INFO.:

US 1999-316447	A2	19990521
US 1999-139562P	P	19990616
US 1999-156366P	P	19990928
US 2000-569193	A1	20000511
US 2000-727532	A1	20001128
US 2001-865044	A1	20010524
US 2002-57812	A1	20020124

AB The invention relates to methods, systems, kits for carrying out a wide variety of different assays that comprise providing a first reagent mixt. which comprises a first reagent having a fluorescent label. A second reagent is introduced into the first reagent mixt. to produce a second reagent mixt., where the second reagent reacts with the first reagent to produce a fluorescently labeled product having a substantially different charge than the first reagent. A polyion is introduced into at least one of the first and second reagent mixts., and the fluorescence polarization in the second reagent mixt. relative to the first reagent mixt. is detd., this fluorescence polarization being indicative of the rate or extent of the reaction. The fluorescence-polarization assays are used for enzyme (e.g., kinase and phosphatase) detn. and nucleic acid detection, in nucleic acid hybridization assay and in detection of single nucleotide substitution.

IC ICM C12Q001-68

ICS C07H021-04

NCL 435006000

CC 9-5 (Biochemical Methods)

Section cross-reference(s): 3, 7

IT Alleles

Capillary tubes

Computer application  
Dephosphorylation, biological  
Electric charge  
Electric field

**Fluorescent indicators**

Fluorometers  
Fluorometry  
Nucleic acid hybridization  
Phosphate group  
Phosphorylation, biological  
Polarized fluorescence  
Polyelectrolytes  
Reaction  
Test kits

(fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

IT Peptide nucleic acids  
Peptides, uses  
Phosphopeptides

**Proteins**

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

IT **Proteins**

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(metal-binding; fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

IT **Protein motifs**

(phosphorylation site; fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

IT **Protein degradation**

(reagent; fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

IT 14127-61-8, Calcium(2+), uses **14701-22-5, Nickel(2+)**,  
uses 20074-52-6, Iron(3+), uses 23713-49-7, Zinc(2+), uses  
24937-47-1, Polyarginine 25104-18-1, Polylysine 25212-18-4,  
Polyarginine **26062-48-6**, Polyhistidine **26854-81-9**,  
Polyhistidine 31985-59-8, Poly(Methyl phosphonate) 38000-06-5,  
Polylysine

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

IT **14701-22-5, Nickel(2+)**, uses **26062-48-6**,  
Polyhistidine **26854-81-9**, Polyhistidine

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(fluorescence-polarization assays using polyions and application to enzyme and nucleic acid assays)

RN 14701-22-5 HCAPLUS

CN Nickel, ion (Ni2+) (8CI, 9CI) (CA INDEX NAME)

Ni2+

RN 26062-48-6 HCAPLUS

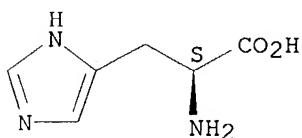
CN L-Histidine, homopolymer (9CI) (CA INDEX NAME)

CM 1

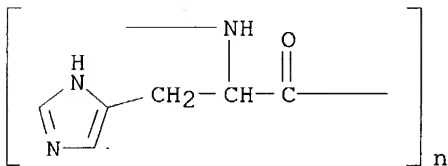
CRN 71-00-1

CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



RN 26854-81-9 HCAPLUS

CN Poly[imino[(1S)-1-(1H-imidazol-4-ylmethyl)-2-oxo-1,2-ethanediyl]] (9CI)  
(CA INDEX NAME)

L45 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:462548 HCAPLUS

DOCUMENT NUMBER: 137:30228

TITLE: Use of a poly(amino-acid)-metal ion complex to link a label to a species of interest

INVENTOR(S): Twu, Jesse J.

PATENT ASSIGNEE(S): Molecular Devices Corporation, USA

SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1215501	A1	20020619	EP 2001-310076	20011130
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 2002132254	A1	20020919	US 2001-172	20011130
PRIORITY APPLN. INFO.:			US 2000-250681P	P 20001130

AB Systems, including compns. and methods, for purifying and/or labeling proteins or other mols. of interest and/or for assaying the conformational and/or binding states of such mols. are described. The compns. may include products having the formula T-P-M-L where T is a species, M is a metal ion, P is a peptide or protein that binds the metal ion, and L is a luminescent label. The methods may include purifying and/or labeling a mol. of interest, detecting luminescence energy transfer, detecting dissocn. and/or assocn. of a mol. or mols. of interest, detecting a

conformational change in a mol. of interest, and detecting an analyte, among others.

IC ICM G01N033-58

CC 9-5 (Biochemical Methods)

IT Nucleic acids  
Oligonucleotides

**Proteins**  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(labeled; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Peptides, preparation

**Proteins**  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(metal ion complexes; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Buffers  
Calibration  
Conformation  
Cyanine dyes

**Fluorescent dyes**  
**Fluorescent substances**  
**Luminescent substances**  
Microtiter plates  
Polarized luminescence  
Purification  
Test kits  
(poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Conformation  
(protein; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT **Proteins**  
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent)  
(purifn. or labeling of; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT Dyes  
(xanthene; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT 71-00-1, Histidine, properties  
RL: PRP (Properties)  
(peptide contg.; poly(amino acid)-metal ion complexes to link labels to species of interest)

IT 51-17-2D, Benzimidazole, compds., conjugates with metal ion complexes  
91-20-3D, Naphthalene, compds., conjugates with metal ion complexes  
91-64-5D, Coumarin, compds., conjugates with metal ion complexes  
92-81-9D, Carbazine, compds., conjugates with metal ion complexes  
120-12-7D, Anthracene, compds., conjugates with metal ion complexes  
129-00-0D, Pyrene, compds., conjugates with metal ion complexes  
135-67-1D, Phenoxazine, compds., conjugates with metal ion complexes  
139-13-9D, Nitrotriacetic acid, conjugates with fluorescent dye and complexes with metal ion 218-01-9D, Chrysene, compds., conjugates with metal ion complexes 260-94-6D, Acridine, compds., conjugates with metal

ion complexes 588-59-0D, Stilbene, compds., conjugates with metal ion complexes 2321-07-5D, **Fluorescein**, compds., conjugates with metal ion complexes 3086-44-0D, **Rhodol**, compds., conjugates with metal ion complexes 3546-21-2D, **Ethidium**, compds., conjugates with metal ion complexes 6837-70-3D, **Rosamine**, compds., conjugates with metal ion complexes 13558-31-1D, compds., conjugates with metal ion complexes 14701-22-5D, complexes with peptide and conjugates with **luminophor**, uses 20074-52-6D, Ferric ion, complexes with phosphopeptide and conjugates with **luminophor**, uses 22537-33-3D, Gallium, ion (Ga<sup>3+</sup>), complexes with phosphopeptide and conjugates with **luminophor**, uses 22541-18-0D, Eu<sup>3+</sup>, complexes with poly(amino acid) and conjugates with **luminophor**, uses 22541-20-4D, Terbium, ion (Tb<sup>3+</sup>), complexes with poly(amino acid) and conjugates with **luminophor**, uses 36015-30-2D, Propidium, compds., conjugates with metal ion complexes 138026-71-8D, Dipyrrometheneboron difluoride, compds., conjugates with metal ion complexes 436139-07-0D, compds., conjugates with metal ion complexes

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (poly(amino acid)-metal ion complexes to link labels to species of interest)

IT 71-00-1, Histidine, properties

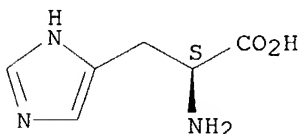
RL: PRP (Properties)

(peptide contg.; poly(amino acid)-metal ion complexes to link labels to species of interest)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



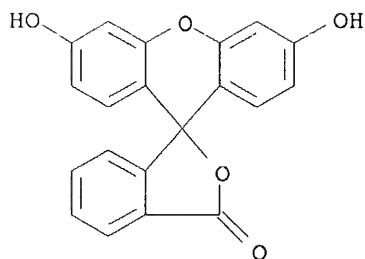
IT 2321-07-5D, **Fluorescein**, compds., conjugates with metal ion complexes 3086-44-0D, **Rhodol**, compds., conjugates with metal ion complexes 6837-70-3D, **Rosamine**,

compds., conjugates with metal ion complexes 14701-22-5D, complexes with peptide and conjugates with **luminophor**, uses

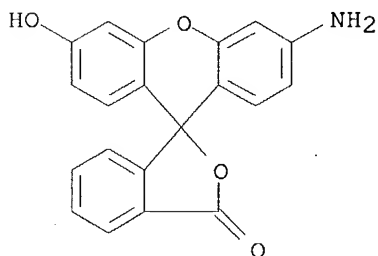
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (poly(amino acid)-metal ion complexes to link labels to species of interest)

RN 2321-07-5 HCAPLUS

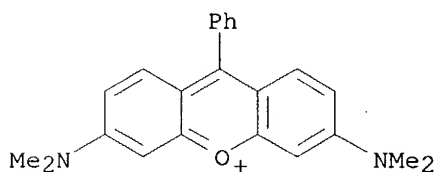
CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI) (CA INDEX NAME)



RN 3086-44-0 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3'-amino-6'-hydroxy-  
(9CI) (CA INDEX NAME)

RN 6837-70-3 HCAPLUS

CN Xanthylium, 3,6-bis(dimethylamino)-9-phenyl-, chloride (9CI) (CA INDEX  
NAME)● Cl<sup>-</sup>

RN 14701-22-5 HCAPLUS

CN Nickel, ion (Ni<sup>2+</sup>) (8CI, 9CI) (CA INDEX NAME)Ni<sup>2+</sup>

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2002:10808 HCAPLUS

DOCUMENT NUMBER: 136:66617

TITLE: Competitive assay method for the determination of  
receptor binding using antibodies  
INVENTOR(S): Meyer-Almes, Franz-Josef  
PATENT ASSIGNEE(S): Evotec Analytical Systems G.m.b.H., Germany  
SOURCE: PCT Int. Appl., 31 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002001226	A1	20020103	WO 2001-EP7424	20010629
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
DE 10030798	A1	20020110	DE 2000-10030798	20000629
EP 1295124	A1	20030326	EP 2001-962796	20010629
EP 1295124	B1	20040218		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRIORITY APPLN. INFO.: DE 2000-10030798 A 20000629 WO 2001-EP7424 W 20010629				
AB	The invention relates to a competitive assay method, for detg. the binding of mols., with the following method steps: (a) prodn. of a soln. with at least two mol. assocns. (A, B) interacting with each other, each comprising at least two different mols. (A, A; B, B), whereby the binding of at least two mols. in the soln. is affected by a change in the property to be detected, (b) detn. of the at least one property to be detected. The invention further relates to a test method for the detn. of the effect of synthetic or biol. substances on the binding properties of mols. in mol. assocns., comprising the following steps: - prodn. of a soln. with at least two mol. assocns. (A, B) interacting with each other, each comprising at least two different mols. (A, A; B, B), whereby the binding of at least two mols. in the soln. is affected by a change in the property to be detected, addn. of an analyte and detn. of the at least one property to be detected. Thus the binding of 4-hydroxytamoxifen to the estrogen receptor .alpha. (B) was detd. by using 17.beta.-estradiol (B'), antibodies to estradiol (A) and tetra-Me rhodamine-labeled estradiol (A').			
IC	ICM G01N033-543 ICS G01N033-53; G01N033-542; G01N033-58			
CC	9-10 (Biochemical Methods) Section cross-reference(s): 1, 2			
IT	Chromophores Colloids Drug screening Drugs Fluorescent substances Fluorometry Immunoassay			

Microtiter plates  
Molecular association  
Radiochemical analysis  
(competitive assay method for detn. of receptor binding using antibodies)

IT Antibodies  
Carbohydrates, processes  
DNA  
Hormones, animal, processes  
Macromolecular compounds  
Neurotransmitters  
Peptides, processes  
Proteins  
RNA  
Steroids, processes  
RL: BCP (Biochemical process); BIOL (Biological study); PROC (Process)  
(competitive assay method for detn. of receptor binding using antibodies)

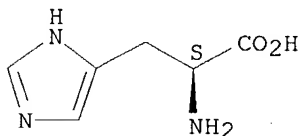
IT 58-85-5, Biotin 71-00-1, Histidine, biological studies  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(competitive assay method for detn. of receptor binding using antibodies)

IT 1303-33-9, Arsenic sulfide 7440-22-4D, Silver, halides 7440-44-0, Carbon, uses 11113-75-0, Nickel sulfide 12653-56-4, Cobalt sulfide  
RL: DEV (Device component use); USES (Uses)  
(competitive assay method for detn. of receptor binding using antibodies)

IT 71-00-1, Histidine, biological studies  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(competitive assay method for detn. of receptor binding using antibodies)

RN 71-00-1 HCAPLUS  
CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2001:851760 HCAPLUS  
DOCUMENT NUMBER: 135:355000  
TITLE: Multihued particulate reagent labels  
INVENTOR(S): Kauvar, Lawrence M.; Sedat, John  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S. Pat. Appl. Publ., 17 pp., Cont.-in-part of U.S. Appl. 2001 31,464.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent



LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001044116	A1	20011122	US 1999-332613	19990614
US 6492125	B2	20021210		
US 2001031464	A1	20011018	US 1998-146984	19980903
US 6642062	B2	20031104		
CA 2342767	AA	20000316	CA 1999-2342767	19990830
WO 2000014545	A1	20000316	WO 1999-US19708	19990830
W: AU, CA, IL, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
AU 9957908	A1	20000327	AU 1999-57908	19990830
EP 1110090	A1	20010627	EP 1999-945277	19990830
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002524739	T2	20020806	JP 2000-569238	19990830

PRIORITY APPLN. INFO.:

US 1998-146984	A2	19980903
US 1999-332613	A	19990614
WO 1999-US19708	W	19990830

AB Particulate labels that can be individually identified comprise particulate supports to which are bound at least two distinguishable signal-generating moieties, such as **fluorophores** emitting at different wavelengths, which signals are detectable and measurable in situ. By varying the ratio and/or amts. of the signal-generating moieties, a multiplicity of different and distinguishable labels is obtained. Each different label can then be coupled to a different reagent and the individual interactions of each reagent with a target obsd. in parallel.

IC ICM G01N033-53  
ICS G01N033-542; G01N033-537; G01N033-543; C07K016-00; G01N033-566; G01N033-531

NCL 435007100

CC 9-5 (Biochemical Methods)  
Section cross-reference(s): 80

IT **Fluorescent substances**  
(**fluorophores**; multihued particulate reagent labels)

IT **Proteins**, general, biological studies  
RL: BPR (Biological process); BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)  
(interactions with library of small mols. sharing same scaffold; multihued particulate reagent labels)

IT Molecules  
(small, interactions with **proteins** or receptors; multihued particulate reagent labels)

IT **7440-02-0D, Nickel**, chelates, properties  
RL: PRP (Properties)  
(and histidine as noncovalent linkage between label and reagent; multihued particulate reagent labels)

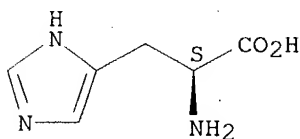
IT **71-00-1, Histidine**, properties  
RL: PRP (Properties)  
(and **nickel** chelator as noncovalent linkage between label and reagent; multihued particulate reagent labels)

IT 7440-02-0D, Nickel, chelates, properties  
 RL: PRP (Properties)  
 (and histidine as noncovalent linkage between label and reagent;  
 multihued particulate reagent labels)  
 RN 7440-02-0 HCAPLUS  
 CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

IT 71-00-1, Histidine, properties  
 RL: PRP (Properties)  
 (and **nickel** chelator as noncovalent linkage between label and  
 reagent; multihued particulate reagent labels)  
 RN 71-00-1 HCAPLUS  
 CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L45 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2001:338685 HCAPLUS  
 DOCUMENT NUMBER: 134:350243  
 TITLE: Microtiter plate based high throughput screening  
 assays for large numbers of cell populations  
 INVENTOR(S): Pedersen, Henrik; Lamsa, Michael; Hansen, Peter Kamp;  
 Frisner, Henrik; Vind, Jesper; Ernst, Steffen;  
 Kongsbak, Lars; Joergensen, Birthe Ravn; Beck, Thomas  
 Christian; Husum, Tommy Lykke; Von Ossowski, Ingemar  
 PATENT ASSIGNEE(S): Novozymes A/S, Den.  
 SOURCE: PCT Int. Appl., 74 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001032844	A1	20010510	WO 2000-DK568	20001010
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

EP 1230348            A1    20020814            EP 2000-965865    20001010  
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO, MK, CY, AL  
PRIORITY APPLN. INFO.:            DK 1999-1605            A 19991105  
   WO 2000-DK568            W 20001010

AB    The present invention is to provide a method to perform assays that efficiently and accurately can screen large nos. of cell populations producing variants of a mol. of interest. In a first aspect the invention relates to a method for high throughput screening (HTS) of a large population of host cells for prodn. of a mol. of interest, the method comprising the steps of: (a) arranging the host cells in a spatial array so each position in the spatial array is occupied by one cell, (b) cultivating the host cells under growth conditions suitable for HTS, (c) assaying each array position for prodn. of the mol. of interest, and (d) selecting the cells from those positions where the mol. was produced, as detd. in step (c).

IC    ICM C12N009-00  
      ICS C12M001-18

CC    9-1 (Biochemical Methods)  
      Section cross-reference(s): 3, 7

IT    Antimicrobial agents  
      Aspergillus  
      Bacillus (bacterium genus)  
      Biochemical molecules  
      Ceramics  
      Cytolysis  
      Drug screening  
      Drugs  
      Fermentation  
      Filamentous fungi  
      Fluorescence  
      **Fluorescent probes**  
      Genetic vectors  
      Genomic library  
      Immobilization, biochemical  
      Isomerization  
      Luminescence  
      Microtiter plates  
      Molecular cloning  
      NMR (nuclear magnetic resonance)  
      Optical absorption  
      Polarized fluorescence  
      Proliferation inhibition  
      Radioactivity  
      Textiles  
          (microtiter plate based high throughput screening assays for large nos. of cell populations)

IT    Enzymes, analysis  
      Lipopeptides  
      Peptides, analysis  
      **Proteins, general, analysis**  
      Transgene  
      RL: ANT (Analyte); ANST (Analytical study)  
          (microtiter plate based high throughput screening assays for large nos. of cell populations)

IT    Fusion **proteins** (chimeric **proteins**)  
      RL: ANT (Analyte); BPN (Biosynthetic preparation); ANST (Analytical

study); BIOL (Biological study); PREP (Preparation)  
(polyhistidine tagged; microtiter plate based high throughput screening  
assays for large nos. of cell populations)

IT Secretion (process)  
(**protein**; microtiter plate based high throughput screening  
assays for large nos. of cell populations)

IT 3326-32-7, **Fluorescein** 5-isothiocyanate 51306-35-5, DTAF  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(fluorescent label; microtiter plate based high throughput screening  
assays for large nos. of cell populations)

IT 7440-02-0, **Nickel**, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(**nickel**-charged nitriloacetic acid agarose; microtiter plate  
based high throughput screening assays for large nos. of cell  
populations)

IT 139-13-9D, reaction products with agarose  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(**nickel**-charged; microtiter plate based high throughput  
screening assays for large nos. of cell populations)

IT 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(tag; microtiter plate based high throughput screening assays for large  
nos. of cell populations)

IT 7440-02-0, **Nickel**, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(**nickel**-charged nitriloacetic acid agarose; microtiter plate  
based high throughput screening assays for large nos. of cell  
populations)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

IT 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(tag; microtiter plate based high throughput screening assays for large  
nos. of cell populations)

RN 26062-48-6 HCAPLUS

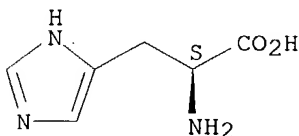
CN L-Histidine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 71-00-1

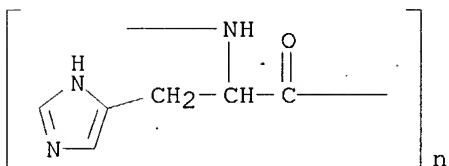
CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



RN 26854-81-9 HCAPLUS

CN Poly[imino[(1S)-1-(1H-imidazol-4-ylmethyl)-2-oxo-1,2-ethanediyl]] (9CI)  
(CA INDEX NAME)



REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

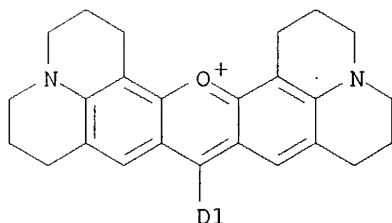
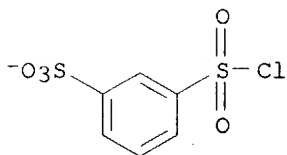
L45 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2001:168190 HCAPLUS  
DOCUMENT NUMBER: 134:217980  
TITLE: High speed parallel molecular nucleic acid sequencing  
INVENTOR(S): Schneider, Thomas D.; Rubens, Denise  
PATENT ASSIGNEE(S): United States Dept. of Health and Human Services, USA  
SOURCE: PCT Int. Appl., 40 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001016375	A2	20010308	WO 2000-US23736	20000829
WO 2001016375	A3	20011004		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2000070868	A5	20010326	AU 2000-70868	20000829
PRIORITY APPLN. INFO.:			US 1999-151580P	P 19990830
			WO 2000-US23736	W 20000829

AB A method and device is disclosed for high speed, automated sequencing of nucleic acid mols. A nucleic acid mol. to be sequenced is exposed to a polymerase in the presence of nucleotides which are to be incorporated into a complementary nucleic acid strand. The polymerase carries a donor **fluorophore**, and each type of nucleotide (e.g. A, T/U, C and G) carries a distinguishable acceptor **fluorophore** characteristic of the particular type of nucleotide. As the polymerase incorporates individual nucleic acid mols. into a complementary strand, a laser continuously irradiates the donor **fluorophore**, at a wavelength that causes it to emit an emission signal (but the laser wavelength does not stimulate the acceptor **fluorophore**). In particular embodiments, no laser is needed if the donor **fluorophore** is a luminescent mol. or is stimulated by one. The emission signal from the

polymerase is capable of stimulating any of the donor **fluorophores** (but not acceptor **fluorophores**), so that as a nucleotide is added by the polymerase, the acceptor **fluorophore** emits a signal assocd. with the type of nucleotide added to the complementary strand. The series of emission signals from the acceptor **fluorophores** is detected, and correlated with a sequence of nucleotides that correspond to the sequence of emission signals.

- IC ICM C12Q001-68
- ICS G01N021-64
- CC 3-1 (Biochemical Genetics)
- IT **Proteins**, specific or class
- RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
- (green fluorescent; high speed parallel mol. nucleic acid sequencing - donor **fluorophores**)
- IT Analytical apparatus
- CCD cameras
- Computer application
- DNA sequence analysis
- Fluorescent substances**
- Lasers
- Microscopes
- RNA sequence analysis
- Spectrometers
- (high speed parallel mol. nucleic acid sequencing)
- IT Aequorins
- RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
- (high speed parallel mol. nucleic acid sequencing - acceptor **fluorophores**)
- IT 9012-90-2D, DNA polymerase, **fluorophore** conjugate 9014-24-8D,
- RNA polymerase, **fluorophore** conjugate 9068-38-6D, Reverse
- transcriptase, **fluorophore** conjugate 61419-02-1,
- Naphthofluorescein 70281-37-7, Tetramethylrhodamine **82354-19-6**
- , **Texas Red**
- RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
- (high speed parallel mol. nucleic acid sequencing)
- IT **2321-07-5, Fluorescein** 138026-71-8, **BODIPY**
- 189200-71-3, **Rhodamine green**
- RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
- (high speed parallel mol. nucleic acid sequencing - acceptor **fluorophores**)
- IT 58-85-5D, Biotin, Streptavidin conjugate 70-18-8D, Glutathione,
- Glutathione S-transferase conjugate **71-00-1D**, Histidine,
- nickel** conjugate **7440-02-0D**, **Nickel**, conjugate
- with histidine, uses 9013-20-1D, Streptavidin, Biotin conjugate
- 50812-37-8D, Glutathione S-transferase, conjugate with glutathione
- RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
- (high speed parallel mol. nucleic acid sequencing - donor **fluorophore-polymerase linker groups**)
- IT **82354-19-6, Texas Red**
- RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
- (high speed parallel mol. nucleic acid sequencing)
- RN 82354-19-6 HCAPLUS
- CN 1H,5H,11H,15H-Xantheno[2,3,4-ij:5,6,7-i'j']diquinolizin-18-ium, 9-[2(or
- 4)-(chlorosulfonyl)-4(or 2)-sulfophenyl]-2,3,6,7,12,13,16,17-octahydro-,
- inner salt (9CI) (CA INDEX NAME)

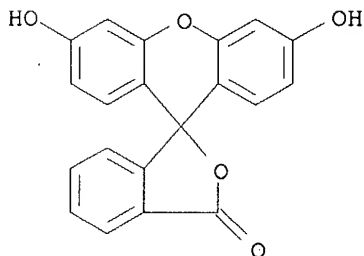


IT 2321-07-5, **Fluorescein**

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(high speed parallel mol. nucleic acid sequencing - acceptor  
**fluorophores**)

RN 2321-07-5 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
(CA INDEX NAME)



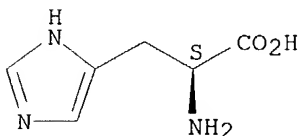
IT 71-00-1D, Histidine, **nickel** conjugate 7440-02-0D  
, **Nickel**, conjugate with histidine, uses

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(high speed parallel mol. nucleic acid sequencing - donor  
**fluorophore**-polymerase linker groups)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L45 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2001:31675 HCAPLUS

DOCUMENT NUMBER: 134:83111

TITLE: Methods and compositions for assaying analytes

INVENTOR(S): Yuan, Chong-Sheng

PATENT ASSIGNEE(S): General Atomics, USA

SOURCE: PCT Int. Appl., 187 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001002600	A2	20010111	WO 2000-US18057	20000630
WO 2001002600	A3	20020110		
WO 2001002600	C2	20020725		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 6376210	B1	20020423	US 1999-347878	19990706
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GB 2368641	A1	20020508	GB 2002-425	20000630
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PRIORITY APPLN. INFO.:

US 1999-347878 A 19990706

US 1999-457205 A 19991206

WO 2000-US18057 W 20000630

AB Comps. and methods for assaying analytes, preferably, small mol. analytes are provided. Assay methods employ, in place of antibodies or mols. that bind to target analytes or substrates, modified enzymes, called substrate trapping enzymes. These modified enzymes retain binding affinity or have enhanced binding affinity for a target substrate or analyte, but have attenuated catalytic activity with respect to that substrate or analyte. The modified enzymes are provided. In particular, mutant S-adenosylhomocysteine (SAH) hydrolases, substantially retaining binding affinity or having enhanced binding affinity for homocysteine or S-adenosylhomocysteine but having attenuated catalytic activity, are provided. Conjugates of the modified enzymes and a facilitating agent, such as agents that aid in purifn. or linkage to a solid support are also provided.

IC ICM C12Q001-00

CC 9-16 (Biochemical Methods)

Section cross-reference(s): 7

IT **Proteins**, specific or class

RL: ANT (Analyte); ANST (Analytical study)



(DNA-binding; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(Fluorescent; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(IgG-binding; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(Polysaccharide binding; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(RNA-binding; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(contractile; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(defense; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(lipid-binding; methods and compns. for assaying analytes)

IT **Proteins**, specific or class  
RL: ANT (Analyte); ANST (Analytical study)  
(metal-binding; methods and compns. for assaying analytes)

IT Affinity  
Amniotic fluid  
Animal cell  
Animal tissue  
Anions  
Artery  
Blood analysis  
Body fluid  
Catalysts  
Cell  
Cerebrospinal fluid  
Composition  
Conjugation (molecular association)  
Connective tissue  
DNA repair  
Disease, animal  
Drugs  
Epithelium  
Epitopes  
Escherichia coli  
Feces  
**Fluorescent substances**  
Fungi  
Genetic markers  
Hydrolysis  
Immobilization, biochemical  
Infection  
Insect (Insecta)  
Ions  
Lactobacillus casei  
Liver  
Lymph node

Michaelis constant  
Molecules  
Mucus  
Muscle  
Mutation  
Neoplasm  
Nerve  
Organ, animal  
Oxidation  
Pancreas  
Plant cell  
Plasmids  
    **Protein** sequences  
Purification  
Recombination, genetic  
Saliva  
Semen  
Sputum  
Sulphydryl group  
Tear (ocular fluid)  
Test kits  
Therapy  
Thermoanaerobacterium thermosulfurigenes  
Transcription, genetic  
Urine analysis  
Yeast  
    (methods and compns. for assaying analytes)

IT Amino acids, analysis  
Bile acids  
Bile salts  
Cardiolipins  
Cerebrosides  
Fusion **proteins** (chimeric **proteins**)  
Gangliosides  
Glycerides, analysis  
Glycerophospholipids  
Hexoses  
Inorganic compounds  
Lipids, analysis  
Monosaccharides  
Nucleic acids  
Nucleosides, analysis  
Nucleotides, analysis  
Oligonucleotides  
Oligosaccharides, analysis  
Organic compounds, analysis  
Pentoses  
Peptides, analysis  
Phosphatidylcholines, analysis  
Phosphatidylethanolamines, analysis  
Phosphatidylinositols  
Phosphatidylserines  
Polysaccharides, analysis  
Sphingolipids  
Sphingomyelins  
Sterols  
Transport **proteins**

Vitamins

Waxes

RL: ANT (Analyte); ANST (Analytical study)  
(methods and compns. for assaying analytes)

IT **Proteins**, specific or class

RL: ANT (Analyte); ANST (Analytical study)  
(motile; methods and compns. for assaying analytes)

IT **Proteins**, specific or class

RL: ANT (Analyte); ANST (Analytical study)  
(nutrient; methods and compns. for assaying analytes)

IT **Proteins**, specific or class

RL: ANT (Analyte); ANST (Analytical study)  
(regulatory; methods and compns. for assaying analytes)

IT **Proteins**, specific or class

RL: ANT (Analyte); ANST (Analytical study)  
(storage; methods and compns. for assaying analytes)

IT **Proteins**, specific or class

RL: ANT (Analyte); ANST (Analytical study)  
(structural; methods and compns. for assaying analytes)

IT 50-69-1, Ribose 50-81-7, Ascorbic acid, analysis 50-89-5, Thymidine, analysis 50-99-7, Glucose, analysis 52-90-4, Cysteine, analysis 53-57-6, Nadph 53-84-9, Nad+ 54-47-7, Pyridoxal 5'-phosphate 56-40-6, Glycine, analysis 56-41-7, Alanine, analysis 56-45-1, Serine, analysis 56-65-5, Atp, analysis 56-82-6, Glyceraldehyde 56-84-8, Aspartic acid, analysis 56-85-9, Glutamine, analysis 56-86-0, Glutamic acid, analysis 56-87-1, Lysine, analysis 57-10-3, Palmitic acid, analysis 57-11-4, Octadecanoic acid, analysis 57-48-7, Fructose, analysis 57-88-5, Cholesterol, analysis 58-61-7, Adenosine, analysis 58-64-0, Adp, analysis 58-68-4, Nadh 58-85-5, Biotin 58-86-6, Xylose, analysis 58-96-8, Uridine 58-97-9, Ump, analysis 58-98-0, Udp, analysis 59-23-4, Galactose, analysis 59-30-3, analysis 59-43-8, Thiamine, analysis 59-67-6, Nicotinic acid, analysis 60-18-4, Tyrosine, analysis 61-19-8, Amp, analysis 61-90-5, Leucine, analysis 63-37-6, Cmp 63-38-7, Cdp 63-39-8, Utp 63-68-3, Methionine, analysis 63-91-2, Phenylalanine, analysis 64-17-5, Ethanol, analysis 65-23-6, Pyridoxin 65-42-9, Lyxose 65-46-3, Cytidine 65-47-4, Ctp 68-19-9, Vitamin b12 69-93-2, Uric acid, analysis 70-47-3, Asparagine, analysis 71-00-1, Histidine, analysis 72-18-4, Valine, analysis 72-19-5, Threonine, analysis 73-22-3, Tryptophan, analysis 73-32-5, Isoleucine, analysis 74-79-3, Arginine, analysis 79-83-4, Pantothenic acid 83-48-7, Stigmasterol 83-88-5, Riboflavin, analysis 85-32-5, Gmp 86-01-1, Gtp 107-43-7, Betaine 118-00-3, Guanosine, analysis 122-32-7, Triolein 134-35-0 143-07-7, Lauric acid, analysis 146-91-8, Gdp 147-81-9, Arabinose 147-85-3, Proline, analysis 365-07-1, Dtmp 365-08-2, Dttp 453-17-8, Triose 491-97-4, Dtdp 506-30-9, Arachidic acid 544-63-8, Myristic acid, analysis 555-43-1, Tristearin 555-44-2, Tripalmitin 557-59-5, Lignoceric acid 653-63-4, Damp 800-73-7, Dcdp 902-04-5, Dgmp 964-26-1, Dump 979-92-0, S-Adenosylhomocysteine 1032-65-1, Dcmp 1406-16-2, Vitamin d 1406-18-4, Vitamin e 1758-51-6, Erythrose 1927-31-7, Datp 2056-98-6, Dctp 2152-76-3, Idose 2564-35-4, Dgtp 2793-06-8, Dadp 3019-74-7, Sedoheptulose 3432-99-3 3458-28-4, Mannose 3493-09-2, Dgdp 4033-27-6 5556-48-9, Ribulose 5987-68-8, Altröse 6027-13-0, Homocysteine 6038-51-3, Allose 7439-89-6, Iron, analysis 7439-95-4, Magnesium, analysis 7439-96-5, Manganese, analysis 7439-98-7, Molybdenum, analysis 7440-02-0, Nickel, analysis 7440-09-7, Potassium, analysis 7440-21-3, Silicon, analysis 7440-23-5,

Sodium, analysis 7440-31-5, Tin, analysis 7440-38-2, Arsenic, analysis 7440-42-8, Boron, analysis 7440-47-3, Chromium, analysis 7440-48-4, Cobalt, analysis 7440-50-8, Copper, analysis 7440-62-2, Vanadium, analysis 7440-66-6, Zinc, analysis 7440-70-2, Calcium, analysis 7553-56-2, Iodine, analysis 7732-18-5, Water, analysis 7782-41-4, Fluorine, analysis 7782-44-7, Oxygen, analysis 7782-50-5, Chlorine, analysis 9004-34-6, Cellulose, analysis 9004-61-9, Hyaluronic acid 9005-25-8, Starch, analysis 9005-79-2, Glycogen, analysis 11103-57-4, Vitamin a 12001-79-5, Vitamin k 12672-30-9, Arsenic ion, analysis 15158-11-9, analysis 16887-00-6, Chloride, analysis 16984-48-8, Fluoride, analysis 19163-87-2, Gulose 29884-64-8, Threose 30077-17-9, Talose 42616-25-1, Methioninase

RL: ANT (Analyte); ANST (Analytical study)  
(methods and comps. for assaying analytes)

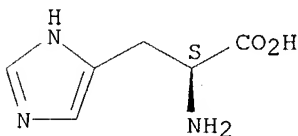
IT 71-00-1, Histidine, analysis 7440-02-0, Nickel, analysis

RL: ANT (Analyte); ANST (Analytical study)  
(methods and comps. for assaying analytes)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L45 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2000:842373 HCAPLUS  
DOCUMENT NUMBER: 134:14929  
TITLE: Fluorescence polarization assays involving polyions  
INVENTOR(S): Nikiforov, Theo T.  
PATENT ASSIGNEE(S): Caliper Technologies Corp., USA  
SOURCE: PCT Int. Appl., 82 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000072016	A1	20001130	WO 2000-US13293	20000511
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU,				

LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE,  
 SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA,  
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,  
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  
 US 6287774 B1 20010911 US 1999-316447 19990521  
 EP 1183536 A1 20020306 EP 2000-935963 20000511  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO  
 JP 2003502620 T2 20030121 JP 2000-620353 20000511  
 AU 762155 B2 20030619 AU 2000-51343 20000511  
 NZ 515384 A 20030829 NZ 2000-515384 20000511  
 CN 1130564 B 20031210 CN 2000-807851 20000511  
 US 2002146703 A1 20021010 US 2001-865044 20010524  
 ZA 2001009192 A 20021107 ZA 2001-9192 20011107  
 US 2003175815 A1 20030918 US 2003-397887 20030326  
 PRIORITY APPLN. INFO.: US 1999-316447 A2 19990521  
 US 1999-139562P P 19990616  
 US 1999-156366P P 19990928  
 WO 2000-US13293 W 20000511  
 US 2001-865044 A1 20010524  
 AB Methods, systems, kits for carrying out a wide variety of different assays  
 that comprise providing a first reagent mixt. which comprises a first  
 reagent having a fluorescent label. A second reagent is introduced into  
 the first reagent mixt. to produce a second reagent mixt., where the  
 second reagent reacts with the first reagent to produce a fluorescently  
 labeled product having a substantially different charge than the first  
 reagent. A polyion is introduced into at least one of the first and  
 second reagent mixts., and the fluorescent polarization in the second  
 reagent mixt. relative to the first reagent mixt. is detd., this  
 fluorescent polarization being indicative of the rate or extent of the  
 reaction.  
 IC ICM G01N033-542  
 ICS C12Q001-48; C12Q001-42; C12Q001-37; C12Q001-68  
 CC 9-5 (Biochemical Methods)  
 Section cross-reference(s): 3  
 IT Electric field  
 Fluids  
 Fluorescent probes  
 Mathematical methods  
 Nucleic acid hybridization  
 Phosphorylation, biological  
 Protein degradation  
 Protein sequences  
 Reaction  
 Test kits  
 (fluorescence polarization assays involving polyions)  
 IT Nucleic acids  
 Peptide nucleic acids  
 Peptides, uses  
 Phosphopeptides  
 Proteins, general, uses  
 Reagents  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (fluorescence polarization assays involving polyions)  
 IT 9001-92-7, Protease 9013-05-2, Phosphatase 9025-75-6, Protein

Phosphatase 9026-43-1, **Protein Kinase** 9031-44-1, Kinase  
 RL: ANT (Analyte); ANST (Analytical study)  
 (fluorescence polarization assays involving polyions)  
 IT 14127-61-8, Calcium ion, uses **14701-22-5, Nickel(2+)**,  
 uses 20074-52-6, Iron(3+), uses 23713-49-7, Zinc ion, uses  
 24937-47-1, Polyarginine 25104-18-1, Polylysine 25212-18-4,  
 Polyarginine **26062-48-6**, Polyhistidine **26854-81-9**,  
 Polyhistidine 38000-06-5, Polylysine  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (fluorescence polarization assays involving polyions)  
 IT **14701-22-5, Nickel(2+)**, uses **26062-48-6**,  
 Polyhistidine **26854-81-9**, Polyhistidine  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (fluorescence polarization assays involving polyions)  
 RN 14701-22-5 HCAPLUS  
 CN Nickel, ion (Ni<sup>2+</sup>) (8CI, 9CI) (CA INDEX NAME)

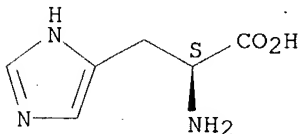
Ni<sup>2+</sup>

RN 26062-48-6 HCAPLUS  
 CN L-Histidine, homopolymer (9CI) (CA INDEX NAME)

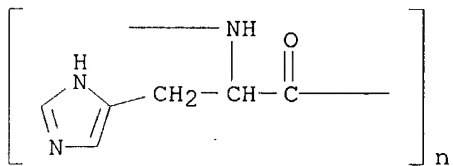
CM 1

CRN 71-00-1  
 CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



RN 26854-81-9 HCAPLUS  
 CN Poly[imino[(1S)-1-(1H-imidazol-4-ylmethyl)-2-oxo-1,2-ethanediyl]] (9CI)  
 (CA INDEX NAME)



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2000:806605 HCAPLUS  
 DOCUMENT NUMBER: 133:360451

TITLE: High-throughput enzyme screening assays utilizing metal-chelate capture methodology  
 INVENTOR(S): Josiah, Serene; Boisclair, Michael  
 PATENT ASSIGNEE(S): Mitotix, Inc., USA  
 SOURCE: U.S., 11 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6146842	A	20001114	US 1999-398341	19990917
PRIORITY APPLN. INFO.:			US 1998-101196P	P 19980921

AB A high throughput enzyme screen has been developed which relies on metal chelate interaction for capture of the product of the enzymic reaction. In the present assay system, a detectable moiety is attached to a substrate having a chelating capturable moiety, which can be captured by an immobilized metal. Detection is effected due to the presence of a detectable label on the reaction product immobilized on the solid phase. Only signal assocd. with tagged protein bound to the solid phase is detected. The present assay can reliably measure enzyme activity, and has high reproducibility, which benefits high throughput screening. The detn. of prenyl transferase activity using the method is described.

IC ICM C12Q001-00  
 ICS C12Q001-48; A61K038-04

NCL 435015000

CC 7-1 (Enzymes)

IT **Scintillators**  
 (high-throughput enzyme screening assays utilizing metal-chelate capture methodol.)

IT **Proteins, general, uses**  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (substrate; high-throughput enzyme screening assays utilizing metal-chelate capture methodol.)

IT 131384-38-8, Farnesyltransferase 135371-29-8, **Protein**  
 geranylgeranyl transferase  
 RL: ANT (Analyte); ANST (Analytical study)  
 (high-throughput enzyme screening assays utilizing metal-chelate capture methodol.)

IT **7440-02-0, Nickel, uses** 7440-05-3, Palladium, uses  
 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8,  
 Ruthenium, uses 7440-70-2, Calcium, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (high-throughput enzyme screening assays utilizing metal-chelate capture methodol.)

IT **71-00-1, Histidine, uses**  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (tag; high-throughput enzyme screening assays utilizing metal-chelate capture methodol.)

IT **7440-02-0, Nickel, uses**  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (high-throughput enzyme screening assays utilizing metal-chelate capture methodol.)

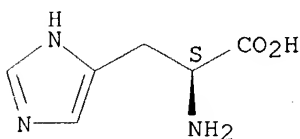
RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

IT 71-00-1, Histidine, uses  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(tag; high-throughput enzyme screening assays utilizing metal-chelate  
capture methodol.)  
RN 71-00-1 HCAPLUS  
CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2000:176024 HCAPLUS  
DOCUMENT NUMBER: 132:205118  
TITLE: Particulate labels in which the hue of the label can  
be adjusted incrementally  
INVENTOR(S): Kauvar, Lawrence M.; Sedat, John  
PATENT ASSIGNEE(S): Trellis Bioinformatics, Inc., USA  
SOURCE: PCT Int. Appl., 38 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000014545	A1	20000316	WO 1999-US19708	19990830
W: AU, CA, IL, JP				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 2001031464	A1	20011018	US 1998-146984	19980903
US 6642062	B2	20031104		
US 2001044116	A1	20011122	US 1999-332613	19990614
US 6492125	B2	20021210		
CA 2342767	AA	20000316	CA 1999-2342767	19990830
AU 9957908	A1	20000327	AU 1999-57908	19990830
EP 1110090	A1	20010627	EP 1999-945277	19990830
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002524739	T2	20020806	JP 2000-569238	19990830
PRIORITY APPLN. INFO.:			US 1998-146984	A 19980903
			US 1999-332613	A 19990614
			WO 1999-US19708	W 19990830

*see above*



AB This invention describes particulate labels that can be individually identified and that comprise particulate supports to which are bound at least two distinguishable signal-generating moieties, such as **fluorophores** emitting at different wavelengths, which signals are detectable and measurable (in situ). By varying the ratio and/or amts. of the signal-generating moieties, a multiplicity of different and distinguishable labels is obtained. Each different label can then be coupled to a different reagent and the individual interactions of each reagent with a target obsd. in parallel. This invention offers the versatility of reagents and intensity of signal available through multihued beads wherein the particulate supports bearing signal-generating moieties are provided specific differentiable signals by virtue of these varying ratios. In addn., the labels can be evaluated not only in soln. or suspension, but their location can be established through use of microscopic techniques in evaluating the samples.

IC ICM G01N033-58

CC 9-5 (Biochemical Methods)  
Section cross-reference(s): 6, 73

IT Chelating agents  
(**nickel**; particulate labels in which hue of label can be adjusted incrementally)

IT Colorimetric indicators  
Combinatorial library  
Disulfide group  
Drugs  
Epitopes  
**Fluorescent indicators**  
**Fluorescent substances**  
Fluorometry  
Indicators  
Labels  
Metabolism  
Molecules  
(particulate labels in which hue of label can be adjusted incrementally)

IT **7440-02-0, Nickel**, analysis  
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(chelator; particulate labels in which hue of label can be adjusted incrementally)

IT **71-00-1, L-Histidine**, analysis 9002-18-0, Agar  
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(particulate labels in which hue of label can be adjusted incrementally)

IT **7440-02-0, Nickel**, analysis  
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(chelator; particulate labels in which hue of label can be adjusted incrementally)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

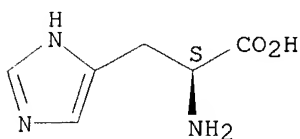
IT 71-00-1, L-Histidine, analysis

RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses) (particulate labels in which hue of label can be adjusted incrementally)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 2000:133710 HCAPLUS

DOCUMENT NUMBER: 132:175805

TITLE: Display of receptors and analysis of binding interactions and drug libraries

INVENTOR(S): Sklar, Larry A.; Prossnitz, Eric; Vilven, Janeen; Neldon, Donna

PATENT ASSIGNEE(S): University of New Mexico, USA

SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 5

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000009539	A1	20000224	WO 1999-US18156	19990810
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9956721	A1	20000306	AU 1999-56721	19990810
PRIORITY APPLN. INFO.:				
			US 1998-96010P	P 19980810
			US 1999-370358	A 19990809
			WO 1999-US18156	W 19990810

AB A display and method of prepg. 7-transmembrane and other receptors for real-time kinetic anal. of binding interactions is disclosed. The

invention includes display on beads and in micelles for multi-well and flow cytometric anal. The invention is useful for ligand discovery and drug action discovery, and G-protein response in particular.

IC ICM C07K001-00  
ICS C07H021-04; G01N033-566

CC 1-1 (Pharmacology)  
Section cross-reference(s): 9

ST drug discovery receptor display binding interaction; **G protein** response receptor binding interaction; library drug receptor display binding interaction; flow cytom drug discovery receptor display

IT Cell membrane  
Combinatorial library  
Drug design  
Drug screening  
Drugs  
    **Fluorescent substances**  
    Fluorometry  
    Immobilization, biochemical  
    Magnetic materials  
    Micelles  
        (receptor display and anal. of binding interactions and drug libraries)

IT Formyl peptide receptors  
G **protein**-coupled receptors  
G **proteins** (guanine nucleotide-binding **proteins**)  
Ligands  
Oligonucleotides  
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)  
    (receptor display and anal. of binding interactions and drug libraries)

IT **7440-02-0, Nickel**, biological studies  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
    (Ni<sup>2+</sup> silica beads; receptor display and anal. of binding interactions and drug libraries)

IT **2321-07-5, Fluorescein** 27072-45-3D, FITC, reaction product with peptides 67247-11-4D, reaction products with FITC  
**82354-19-6, Texas red**  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
    (receptor display and anal. of binding interactions and drug libraries)

IT 13558-31-1D, derivs.  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
    (**rhodamine**; receptor display and anal. of binding interactions and drug libraries)

IT 58-85-5, Biotin **71-00-1, L-Histidine**, biological studies  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
    (tag; receptor display and anal. of binding interactions and drug libraries)

IT **7440-02-0, Nickel**, biological studies  
RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
    (Ni<sup>2+</sup> silica beads; receptor display and anal. of binding interactions and drug libraries)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

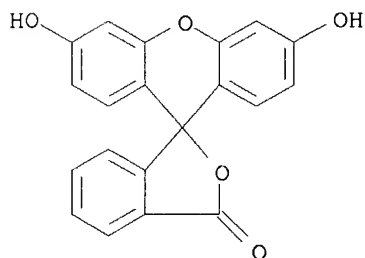
Ni

IT 2321-07-5, Fluorescein 82354-19-6,  
Texas red

RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)  
(receptor display and anal. of binding interactions and drug libraries)

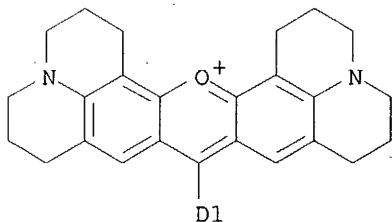
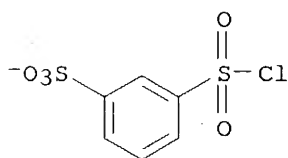
RN 2321-07-5 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
(CA INDEX NAME)



RN 82354-19-6 HCAPLUS

CN 1H,5H,11H,15H-Xantheno[2,3,4-ij:5,6,7-i'j']diquinolizin-18-ium, 9-[2(or  
4)-(chlorosulfonyl)-4(or 2)-sulfophenyl]-2,3,6,7,12,13,16,17-octahydro-,  
inner salt (9CI) (CA INDEX NAME)



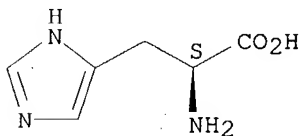
IT 71-00-1, L-Histidine, biological studies

RL: BUU (Biological use, unclassified); THU (Therapeutic use); BIOL  
(Biological study); USES (Uses)  
(tag; receptor display and anal. of binding interactions and drug  
libraries)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 14 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1999:189194 HCAPLUS

DOCUMENT NUMBER: 130:219108

TITLE: Methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation

INVENTOR(S): Carr, Francis Joseph; Carter, Graham; Hamilton, Anita; Adair, Fiona; Williams, Steven

PATENT ASSIGNEE(S): Biovation Limited, UK

SOURCE: PCT Int. Appl., 118 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9911777	A1	19990311	WO 1998-GB2649	19980903
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 754377	B2	20021114	AU 1998-87560	19980414
CA 2302147	AA	19990311	CA 1998-2302147	19980903
AU 9888792	A1	19990322	AU 1998-88792	19980903
EP 1003853	A1	20000531	EP 1998-940471	19980903
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001514850	T2	20010918	JP 2000-508788	19980903
PRIORITY APPLN. INFO.:				
			GB 1997-18552	A 19970903
			GB 1997-19834	A 19970918
			GB 1997-20184	A 19970924
			GB 1997-20522	A 19970929
			GB 1997-20523	A 19970929
			GB 1997-20524	A 19970929
			GB 1997-20525	A 19970929
			US 1997-70037P	P 19971230
			US 1997-70050P	P 19971230

US 1997-70062P	P	19971230
US 1997-70063P	P	19971230
GB 1998-1255	A	19980122
GB 1998-3828	A	19980225
GB 1998-7760	A	19980414
GB 1998-11130	A	19980523
EP 1998-940471	A	19980903
WO 1998-GB2649	W	19980903

AB A method of identifying genes by identifying gene products that interact with a specific ligand using ordered arrays of products formed by in vitro transcription and translation of individual clones is described. The method is particularly intended for use in screening cDNA libraries in cloning vectors using strong promoters, e.g., from bacteriophage T7. The translation products may be immobilized by a no. of methods including prior to release from ribosomes by immobilization of the ribosomes. The method can be adapted to high-d. high-throughput screening methods. Use of the methods to identify altered patterns of protein modification in tumors and in Alzheimer's disease are described. CDNAs from a normal colon library were transcribed and translated in vitro and incubated with proteins of normal colon and colorectal cancer tissues before fractionation on 2D gels. Of 2622 spots seen on gels, 12 showed different migration properties as a result of incubation with normal or tumor protein exts. An ordered cDNA library from human fetal brain was prepd. in Escherichia coli and the gene products from individual clones were immobilized on streptavidin coated plates by translation in the presence of tRNAlys charged with biotinyllysine. These were screened for kinase substrates by incubating them with phosphorylation-competent exts. from brains of normal and Alzheimer's disease patients and more general interaction was assayed using **fluorescein**-labeled exts. A series of variations on the method, including the use of dicistronic constructs are described.

IC ICM C12N015-10  
ICS C12N011-14; C07K017-00; C12Q001-68; C12P021-00; C12N015-12;  
C12N015-24; C12N015-49; C07K014-16; C07K014-54; C07K016-00

CC 3-1 (Biochemical Genetics)

ST cDNA library screening transcription translation ordered array;  
**protein** interaction cDNA library screening

IT Pilins

RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(F-pilins, as reporter mol. in liposomes, in screening for  
**protein** interactions; methods for screening DNA libraries by  
screening ordered arrays of gene products generated by in vitro  
transcription and translation)

IT **Proteins**, specific or class

RL: ARU (Analytical role, unclassified); BUU (Biological use,  
unclassified); ANST (Analytical study); BIOL (Biological study); USES  
(Uses)

(IRF (iron regulatory factor), immobilized for capture of ribosomes by  
mRNA binding; methods for screening DNA libraries by screening ordered  
arrays of gene products generated by in vitro transcription and  
translation)

IT **Proteins**, specific or class

RL: ARU (Analytical role, unclassified); BUU (Biological use,  
unclassified); ANST (Analytical study); BIOL (Biological study); USES  
(Uses)

(RNA-binding, immobilized for capture of ribosomes by mRNA binding;  
methods for screening DNA libraries by screening ordered arrays of gene

- products generated by in vitro transcription and translation)
- IT Alzheimer's disease  
(altered patterns of **protein** phosphorylation in; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Porins  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(as reporter mol. in liposomes, in screening for **protein** interactions; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Intestine, neoplasm  
(colorectal, altered patterns of **protein** modification in; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Ribosome  
(immobilization of nascent **protein**-contg.; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Translation, genetic  
(inhibition, **proteins** of, immobilized for capture of ribosomes by mRNA binding; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Molecular association  
(of **proteins**, in screening cDNA libraries; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Immobilization, biochemical  
(**protein**, of translation products or ribosomes; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Phosphorylation, biological  
(**protein**, screening for substrates for; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT Liposomes  
(reporter mol.-contg., in screening for **protein** interactions; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT **Proteins**, specific or class  
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(translation-inhibiting, immobilized for capture of ribosomes by mRNA binding; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(as affinity label; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)
- IT 7440-02-0, Nickel, analysis 9003-99-0, Peroxidase 9031-11-2, .beta.-Galactosidase  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(as reporter mol. in liposomes, in screening for **protein**

interactions; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)

IT 9001-86-9D, Phospholipase C, fusion **proteins**

RL: ARU (Analytical role, unclassified); CAT (Catalyst use); ANST (Analytical study); USES (Uses)

(liposome lysis using, in screening for **protein** interactions; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)

IT 26062-48-6, Polyhistidine 26854-81-9, Polyhistidine

RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(as affinity label; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)

RN 26062-48-6 HCAPLUS

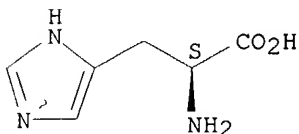
CN L-Histidine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 71-00-1

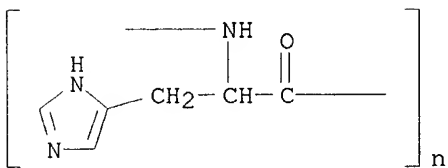
CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



RN 26854-81-9 HCAPLUS

CN Poly[imino[(1S)-1-(1H-imidazol-4-ylmethyl)-2-oxo-1,2-ethanediyl]] (9CI)  
(CA INDEX NAME)



IT 7440-02-0, Nickel, analysis

RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(as reporter mol. in liposomes, in screening for **protein** interactions; methods for screening DNA libraries by screening ordered arrays of gene products generated by in vitro transcription and translation)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1998:716219 HCAPLUS

DOCUMENT NUMBER: 129:313117

TITLE: Method and immunoassay assembly for the detection of biological materials using a capture phase with immobilized reagent

INVENTOR(S): Elaissari, Abdelhamid; Duracher, David; Pichot, Christian; Mallet, Francois; Novelli-Rousseau, Armelle

PATENT ASSIGNEE(S): Bio Merieux, Fr.

SOURCE: PCT Int. Appl., 25 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9847000	A2	19981022	WO 1998-FR772	19980416
WO 9847000	A3	19990211		
W:				
AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:				
GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
FR 2762394	A1	19981023	FR 1997-4923	19970416
FR 2762394	B1	19990528		
AU 9874362	A1	19981111	AU 1998-74362	19980416
EP 975968	A2	20000202	EP 1998-921550	19980416
R:				
AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2001521625	T2	20011106	JP 1998-543572	19980416
US 2002160526	A1	20021031	US 2000-403085	20000107
PRIORITY APPLN. INFO.:			FR 1997-4923	A 19970416
			WO 1998-FR772	W 19980416

AB The invention concerns a method for isolating a target biol. material contained in a sample, consisting of the following steps: providing a capture phase, in microparticulate or linear form, consisting of at least a first particulate or linear polymer, with apparent hydrophile character and first complexing groups, the latter being bound by co-ordination to a first transition metal, which is itself bound to a first biol. entity capable of specifically recognizing the target biol. material; contacting said target biol. material with at least the capture phase; and detecting the capture phase-target biol. material complex, optionally with a detection phase, in microparticulate or linear form, and consisting of at least a second particulate or linear polymer, with apparent hydrophile character and second complexing groups, the latter being bound by co-ordination to a second transition metal, which is itself bound to a second biol. entity capable of specifically recognizing the target biol. material, and a marker. Markers are e.g. enzymes, fluorescent dyes, magnetic particles, antigens, heptanes, antibodies. Thus

styrene-N-isopropylacrylamide copolymer was functionalized with 2-aminoethyl methacrylate; poly(N-isopropylacrylamide) was functionalized with maleic anhydride-methylvinylether copolymer and grafted to the amino-group contg. polymer. Zn<sup>2+</sup> was bound to the complexation groups and the recombinant protein RH24 with a histidine tag was immobilized to obtain the capturing phase.

IC ICM G01N033-543

CC 9-10 (Biochemical Methods)

IT **Proteins**, specific or class

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (immobilized onto graft polymeric-transient metal complexes; method and immunoassay assembly for detection of biol. materials using a capture phase with immobilized reagent)

IT Biological materials

**Fluorescent dyes**

Immobilization, biochemical

(method and immunoassay assembly for detection of biol. materials using a capture phase with immobilized reagent)

IT 52-90-4, L-Cysteine, properties 71-00-1, L-Histidine, properties

RL: PRP (Properties)

(method and immunoassay assembly for detection of biol. materials using a capture phase with immobilized reagent)

IT 97-65-4, Itaconic acid, reactions 7439-92-1, Lead, reactions

7439-95-4, Magnesium, reactions 7439-96-5, Manganese, reactions

7440-02-0, Nickel, reactions 7440-05-3, Palladium,

reactions 7440-06-4, Platinum, reactions 7440-48-4, Cobalt, reactions

7440-50-8, Copper, reactions 7440-57-5, Gold, reactions 7440-66-6D,

Zinc, complex with graft polymer, reactions 7659-36-1D, 2-Propenoic

acid, 2-methyl-, 2-aminoethyl ester, reaction with styrene-N-

isopropylacrylamide copolymer and grafted with maleic anhydride-

methylvinylether copolymer functionalized poly(N-isopropylacrylamide)

RL: RCT (Reactant); RACT (Reactant or reagent)

(method and immunoassay assembly for detection of biol. materials using a capture phase with immobilized reagent)

IT 71-00-1, L-Histidine, properties

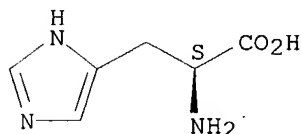
RL: PRP (Properties)

(method and immunoassay assembly for detection of biol. materials using a capture phase with immobilized reagent)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 7440-02-0, Nickel, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(method and immunoassay assembly for detection of biol. materials using a capture phase with immobilized reagent)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L45 ANSWER.16 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:661040 HCAPLUS

DOCUMENT NUMBER: 125:299474

TITLE: Preparation of an autolysis-resistant

interleukin-1.beta. converting enzyme mutant

AUTHOR(S): Dang, Luan C.; Talanian, Robert V.; Banach, David;  
Hackett, Maria C.; Gilmore, John L.; Hays, Sheryl J.;  
Mankovich, John A.; Brady, Kenneth D.CORPORATE SOURCE: BASF Bioresearch Corporation, Worcester, MA, 01605,  
USA

SOURCE: Biochemistry (1996), 35(47), 14910-14916

CODEN: BICHAW; ISSN: 0006-2960

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We describe the expression, purifn., and characterization of human interleukin-1.beta. converting enzyme (ICE) contg. an affinity tag and modified to resist autoproteolysis. The point mutation Asp381 to Glu was added to eliminate the major site of autolytic degrdn. while maintaining catalytic activity, and an N-terminal polyhistidine tag was added in place of the ICE pro-region to facilitate purifn. N-His (D381E) ICE was expressed in Escherichia coli and purified by **nickel**-chelating Sepharose and size-exclusion chromatog. (SEC). The enzyme was stabilized greater than 80-fold against autolytic degrdn. relative to wild-type N-His ICE. SDS-PAGE anal. with silver-staining revealed no impurities, and 85% of the protein was catalytically active as detd. by titrn. with a novel titrant, PD 163594 (3-[2-(2-benzyloxycarbonylamino-3-methylbutyrylamino)propionylamino]-4-oxo-5-(2-oxo-2H-chromen-7-yloxy)pentanoic acid)). An oxidized adduct of ICE with glutathione, formed by disulfide rearrangement with oxidized glutathione to inhibit and stabilize the enzyme during purifn., was rapidly reduced upon exposure to 5 mM DTT. One mole of glutathione was released per mol of active enzyme. Of the nine cysteines in ICE, eight were present in their reduced form in the glutathione adduct. N-His (D381E) ICE cleaved Ac-YVAD-Amc with the Michaelis-Menten parameters  $K_M = 14 \mu\text{M}$  and  $k_{cat} = 0.7 \text{ s}^{-1}$ , values essentially identical to those reported for enzyme from natural sources.

CC 16-5 (Fermentation and Bioindustrial Chemistry)

Section cross-reference(s): 3, 7

IT **Fluorescent substances**

(probes, autolysis-resistant interleukin-1.beta. converting enzyme mutant prepn. using fermn., polyhistidine tag and affinity purifn., and synthetic fluorescent titrant)

IT **26062-48-6DP**, Polyhistidine, interleukin-1.beta. converting enzyme mutant affinity-tagged derivs. **26854-81-9DP**, Polyhistidine, interleukin-1.beta. converting enzyme mutant affinity-tagged derivs. 122191-40-6DP, Interleukin-1.beta. Converting Enzyme, mutant polyhistidine-tagged derivs.

RL: ANT (Analyte); BMF (Bioindustrial manufacture); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)

(autolysis-resistant interleukin-1.beta. converting enzyme mutant prepn. using fermn., polyhistidine tag and affinity purifn., and

synthetic fluorescent titrant)

IT 26062-48-6DP, Polyhistidine, interleukin-1.beta. converting enzyme mutant affinity-tagged derivs. 26854-81-9DP, Polyhistidine, interleukin-1.beta. converting enzyme mutant affinity-tagged derivs. RL: ANT (Analyte); BMF (Bioindustrial manufacture); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)  
(autolysis-resistant interleukin-1.beta. converting enzyme mutant prepn. using fermn., polyhistidine tag and affinity purifn., and synthetic fluorescent titrant)

RN 26062-48-6 HCAPLUS

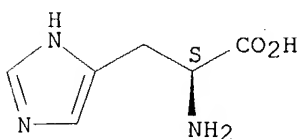
CN L-Histidine, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 71-00-1

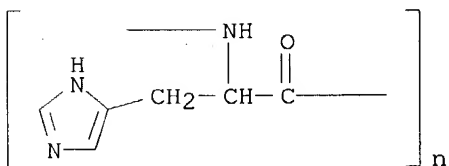
CMF C6 H9 N3 O2

Absolute stereochemistry. Rotation (-).



RN 26854-81-9 HCAPLUS

CN Poly[imino[(1S)-1-(1H-imidazol-4-ylmethyl)-2-oxo-1,2-ethanediyl]] (9CI)  
(CA INDEX NAME)



L45 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:473272 HCAPLUS

DOCUMENT NUMBER: 125:109681

TITLE: Technique for joining amino acid sequences and novel composition useful in immunoassays

INVENTOR(S): Peterson, Darrell L.

PATENT ASSIGNEE(S): Center for Innovative Technology, USA

SOURCE: PCT Int. Appl., 29 pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 9619730            A1    19960627            WO 1995-US16328    19951215  
           W: AU, CA, ES, JP, KR  
           RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE  
 US 5840834            A    19981124            US 1994-360360    19941221  
 US 5674677            A    19971007            US 1995-572441    19951214  
 AU 9645994            A1    19960710            AU 1996-45994    19951215  
 PRIORITY APPLN. INFO.:            US 1994-360360    19941221  
    US 1995-572441    19951214  
    WO 1995-US16328    19951215

AB    Two amino acid sequences are joined together by using an electron acceptor moiety and a linking moiety, such as a chelating agent. In particular, an amino acid sequence specific for binding to a material of interest is linked to an enzyme that acts on an indicator such as a colorimetric, phosphorescent, fluorescent, or chemiluminescent substrate. The linking compn. is useful in immunoassays. Examples show the ability of the combination of org. chelator, metal ion, enzyme, and protein to detect antibodies to a variety of viruses (e.g., bovine immunodeficiency virus, feline immunodeficiency virus, caprine arthritis and encephalitis virus, hepatitis B virus, hepatitis C virus) in blood.

IC    ICM G01N033-53  
 CC    9-10 (Biochemical Methods)  
       Section cross-reference(s): 14, 15

ST    **protein** conjugate enzyme immunoassay antibody detn; blood virus antibody detection immunoassay; immunodeficiency virus antibody detection blood

IT    Peptides, preparation  
       **Proteins**, preparation  
       RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
       (enzyme conjugates; peptide or **protein** conjugates prepn. for immunoassay)

IT    Blood analysis  
       Chelating agents  
       Electron acceptors  
       **Fluorescent substances**  
       Immunoassay  
       **Phosphorescent substances**  
       (peptide or **protein** conjugates prepn. for immunoassay)

IT    Antibodies  
       Antigens  
       RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
       (peptide or **protein** conjugates prepn. for immunoassay)

IT    Enzymes  
       RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
       (**protein** conjugates; peptide or **protein** conjugates prepn. for immunoassay)

IT    **Proteins**, specific or class  
       RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
       (NS3 (nonstructural, 3), peptide or **protein** conjugates prepn. for immunoassay)

IT    Virus, animal  
       (bovine immunodeficiency, peptide or **protein** conjugates prepn. for immunoassay)

IT    Virus, animal

(caprine arthritis-encephalitis, peptide or **protein** conjugates prepn. for immunoassay)

IT **Luminescent substances**  
(chemi-, peptide or **protein** conjugates prepn. for immunoassay)

IT **Proteins**, specific or class  
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(core, peptide or **protein** conjugates prepn. for immunoassay)

IT Immunoassay  
(enzyme-linked immunosorbent assay, peptide or **protein** conjugates prepn. for immunoassay)

IT Virus, animal  
(feline immunodeficiency, peptide or **protein** conjugates prepn. for immunoassay)

IT Virus, animal  
(hepatitis B, peptide or **protein** conjugates prepn. for immunoassay)

IT Antigens  
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(hepatitis B surface, pre-S **protein**, peptide or **protein** conjugates prepn. for immunoassay)

IT Virus, animal  
(hepatitis C, peptide or **protein** conjugates prepn. for immunoassay)

IT **Proteins**, specific or class  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(oligohistidine-terminated, peptide or **protein** conjugates prepn. for immunoassay)

IT 9001-78-9  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(peptide or **protein** conjugates prepn. for immunoassay)

IT 9003-99-0DP, Peroxidase, carboxymethyllysine conjugates 113231-05-3DP, enzyme conjugates  
RL: ARG (Analytical reagent use); RCT (Reactant); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(peptide or **protein** conjugates prepn. for immunoassay)

IT **71-00-1DP**, Histidine, **proteins** contg.  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(peptide or **protein** conjugates prepn. for immunoassay)

IT 139-13-9, Nitrilotriacetic acid 142-73-4, Iminodiacetic acid 1245-13-2, Bicinchoninic acid **7440-02-0, Nickel**, analysis 7440-50-8, Copper, analysis 7440-66-6, Zinc, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(peptide or **protein** conjugates prepn. for immunoassay)

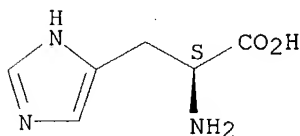
IT 79-08-3, Bromoacetic acid 1155-64-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(peptide or **protein** conjugates prepn. for immunoassay)

IT **71-00-1DP**, Histidine, **proteins** contg.  
RL: ARG (Analytical reagent use); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses)  
(peptide or **protein** conjugates prepn. for immunoassay)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 7440-02-0, Nickel, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(peptide or **protein** conjugates prepn. for immunoassay)  
RN 7440-02-0 HCAPLUS  
CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L45 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:836023 HCAPLUS

DOCUMENT NUMBER: 123:222006

TITLE: Engineering **Protein**-Lipid Interactions:  
Targeting of Histidine-Tagged **Proteins** to  
Metal-Chelating Lipid Monolayers

AUTHOR(S): Ng, Kingman; Pack, Daniel W.; Sasaki, Darryl Y.;  
Arnold, Frances H.

CORPORATE SOURCE: Division of Chemistry and Chemical Engineering 210-41,  
California Institute of Technology, Pasadena, CA,  
91125, USA

SOURCE: Langmuir (1995), 11(10), 4048-55

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB In an effort to devise simple and robust systems that can reproduce in synthetic membranes important features of biol. targeting and surface assembly, a versatile system for targeting proteins to lipid membranes has been developed. This system utilizes metal-chelating iminodiacetate (IDA) lipids loaded with divalent metal ions (Cu<sup>2+</sup> or Ni<sup>2+</sup>) to target proteins genetically modified with a poly(histidine) fusion peptide. The new pyrene-labeled iminodiacetate lipid 2 can be used for fluorescence imaging and spectroscopic studies of lipid reorganization induced by protein binding and assembly on lipid membranes. Metal-chelating IDA lipids 1 and 2 target the sol. domain of cytochrome b5 to lipid assemblies by sharing the metal ion with a six-histidine sequence appended to the protein C-terminus. Protein binding to Langmuir monolayers contg. the IDA-Cu<sup>2+</sup> lipids 1 and 2 is obsd. by monitoring increases in the monolayer area at a surface pressure high enough to block nonspecific protein insertion (25 mN/m). The His-tagged cytochrome b5 binds the Cu<sup>2+</sup>-loaded 2 monolayer with high affinity (K<sub>d</sub> < 50 nM). No binding is obsd. in the absence of metal ions or for cytochrome b5 without the 6-His fusion peptide. Specific protein targeting to the monolayer loaded with Ni<sup>2+</sup> is confirmed by fluorescence microscopy of **fluorescein**-labeled 6-His

cytochrome b5. The poly(histidine) fusion peptide, widely used for recombinant protein purifn., makes this targeting approach applicable to a large no. of proteins.

CC 9-1 (Biochemical Methods)  
 Section cross-reference(s): 6

ST engineering **protein** lipid interaction; histidine tagged metal chelating monolayer

IT Lipids, processes  
**Proteins**, processes  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT **Proteins**, specific or class  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (histidine-tagged; engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT Imaging  
 RL: ANT (Analyte); ANST (Analytical study)  
 (fluorescent, engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT 168479-19-4D, copper complexes  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT 71-00-1D, Histidine, -tagger **proteins** 7440-02-0D, Nickel, -chelating lipid monolayers 7440-50-8D, Copper, -chelating lipid monolayers 9035-39-6, Cytochrome b5 60202-16-6, **Protein c**  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT 6290-05-7, Diethyl iminodiacetate 86334-56-7 168479-17-2 168479-18-3  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT 168479-11-6P 168479-12-7P 168479-13-8P 168479-14-9P 168479-15-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

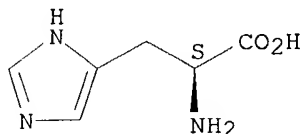
IT 168479-16-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)

IT 71-00-1D, Histidine, -tagger **proteins** 7440-02-0D, Nickel, -chelating lipid monolayers  
 RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (engineering **protein**-lipid interactions: targeting of histidine-tagged **proteins** to metal-chelating lipid monolayers)



monolayers)  
 RN 71-00-1 HCAPLUS  
 CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 7440-02-0 HCAPLUS  
 CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

L45 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1995:787305 HCAPLUS  
 DOCUMENT NUMBER: 123:187323  
 TITLE: Enzyme amplified competitive and sandwich chelation assays for metal ions  
 INVENTOR(S): Hammock, Bruce D.; Szurdoki, Ferenc; Kido, Horacio  
 PATENT ASSIGNEE(S): Regents of the University of California, USA  
 SOURCE: PCT Int. Appl., 81 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9514926	A1	19950601	WO 1994-US13346	19941116
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5459040	A	19951017	US 1993-156567	19931122
CA 2172620	AA	19950601	CA 1994-2172620	19941116
EP 730737	A1	19960911	EP 1995-902611	19941116
R: DE, FR, GB				
JP 09505667	T2	19970603	JP 1994-515153	19941116
PRIORITY APPLN. INFO.:			US 1993-156567	19931122
			WO 1994-US13346	19941116

AB The present invention provides methods for assaying for a metal ion in a sample. In one aspect, the present invention relates to an enzyme amplified sandwich assay. This method relies upon the ability of the metal ion to form a complex with two chelators. Such an assocn. is termed a sandwich complex with the metal ion forming the middle of the sandwich. In this method the 1st chelator is immobilized on a solid support, while the 2nd chelator is linked to a reporter group. This arrangement forms a highly selective, sensitive, and convenient system for the quant. detection of metal ions. This approach combines the specific recognition of the metal ion by the 1st and 2nd chelators, with the great signal

amplification offered by enzymes or other reporter groups. In another aspect, the present invention relates to a competitive assay that relies on the competitive inhibition of complex formation between a chelator immobilized on a solid support and an organometallic compd. attached to a reporter group, by the metal ions of interest in a sample.

IC ICM G01N033-20

ICS G01N033-58; G01N033-535

CC 79-6 (Inorganic Analytical Chemistry)

IT **Fluorescent substances**

(reporter group; metal detn. by enzyme amplified competitive and sandwich chelation assays)

IT 7439-92-1, Lead, analysis 7439-96-5, Manganese, analysis 7439-97-6, Mercury, analysis **7440-02-0, Nickel**, analysis 7440-05-3, Palladium, analysis 7440-22-4, Silver, analysis 7440-28-0, Thallium, analysis 7440-36-0, Antimony, analysis 7440-38-2, Arsenic, analysis 7440-41-7, Beryllium, analysis 7440-43-9, Cadmium, analysis 7440-45-1, Cerium, analysis 7440-47-3, Chromium, analysis 7440-48-4, Cobalt, analysis 7440-50-8, Copper, analysis 7440-57-5, Gold, analysis 7440-61-1, Uranium, analysis 7440-66-6, Zinc, analysis 7440-67-7, Zirconium, analysis 7782-49-2, Selenium, analysis  
RL: ANT (Analyte); ANST (Analytical study)

(metal detn. by enzyme amplified competitive and sandwich chelation assays)

IT 52-66-4, D,L-Penicillamine 59-52-9, 2,3-Dimercaptopropanol 60-10-6, Diphenylthiocarbazone **71-00-1, Histidine**, analysis 74-61-3, 2,3-Dimercaptopropanesulfonic acid 85-85-8, 1-(2-Pyridylazo)-2-naphthol 87-02-5 123-54-6, Acetylacetone, analysis 594-07-0, Dithiocarbamic acid 1141-59-9, 4-(2-Pyridylazo)resorcinol 52018-85-6, 2-(3-Sulfobenzoyl)pyridine-2-pyridylhydrazone

RL: ARU (Analytical role, unclassified); ANST (Analytical study)

(sandwich chelator; metal detn. by enzyme amplified competitive and sandwich chelation assays)

IT **7440-02-0, Nickel**, analysis

RL: ANT (Analyte); ANST (Analytical study)

(metal detn. by enzyme amplified competitive and sandwich chelation assays)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

IT **71-00-1, Histidine**, analysis

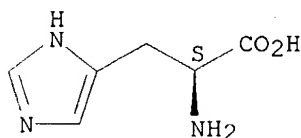
RL: ARU (Analytical role, unclassified); ANST (Analytical study)

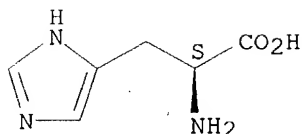
(sandwich chelator; metal detn. by enzyme amplified competitive and sandwich chelation assays)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).





L45 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1993:404012 HCAPLUS  
 DOCUMENT NUMBER: 119:4012  
 TITLE: Engineering metal coordination sites into the antibody light chain  
 AUTHOR(S): Wade, Warren S.; Koh, Jong S.; Han, Nianhe; Hoekstra, Denise M.; Lerner, Richard A.  
 CORPORATE SOURCE: Dep. Chem. Mol. Biol., Scripps Res. Inst., La Jolla, CA, 92037, USA  
 SOURCE: Journal of the American Chemical Society (1993), 115(11), 4449-56  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A three-histidine Zn<sup>2+</sup> binding site based on the carbonic anhydrase B site has been engineered into the four available sites on the light chain of the **fluorescein** binding antibody 4-4-20. All mutant antibodies bind **fluorescein**. Transition metal binding was assayed by tryptophan fluorescence quenching. Two of the four sites exhibit metal affinities consistent with complexation by three ligands. The specificity of the highest affinity site was probed by mutagenesis. For various combinations of histidine, aspartate, and glutamate residues, affinities range from -5 to -10 kcal/mol for Cu<sup>2+</sup>, -3 to -6.5 kcal/mol for Zn<sup>2+</sup>, and -3 and -5.5 kcal/mol for Cd<sup>2+</sup>. Binding is also obsd. between at least one mutant and Co<sup>2+</sup> or Ni<sup>2+</sup>. The second highest affinity site shows a metal-dependent increase in **fluorescein** binding, indicating a ternary complex. Several ligand combinations give affinities in a potentially useful range for antibody catalysis with only four amino acid changes.

CC 7-8 (Enzymes)  
 ST catalytic antibody coordination transition metal engineering;  
**fluorescein** catalytic antibody transition metal engineering  
 IT Antibodies  
 RL: BIOL (Biological study)  
 (catalytic, to **fluorescein**, transition metal binding by light chain of, mutation in engineering of site for)

IT 7440-02-0, Nickel, biological studies 7440-43-9,  
 Cadmium, biological studies 7440-48-4, Cobalt, biological studies  
 7440-50-8, Copper, biological studies 7440-66-6, Zinc, biological studies  
 RL: BIOL (Biological study)  
 (antifluorescein catalytic antibody light chain binding by, mutation in engineering of site for)

IT 2321-07-5, Fluorescein  
 RL: BIOL (Biological study)  
 (catalytic antibody light chain to, transition metal binding by, mutation in engineering of site for)

IT 56-84-8, Aspartic acid, biological studies 56-86-0, Glutamic acid, biological studies 71-00-1, Histidine, biological studies

RL: BIOL (Biological study)  
(of antiluorescein catalytic antibody light chain, in binding by  
transition metal)

IT 7440-02-0, **Nickel**, biological studies

RL: BIOL (Biological study)  
(antiluorescein catalytic antibody light chain binding by, mutation in  
engineering of site for)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

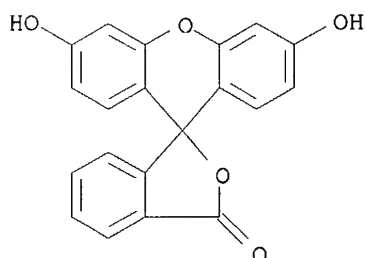
Ni

IT 2321-07-5, **Fluorescein**

RL: BIOL (Biological study)  
(catalytic antibody light chain to, transition metal binding by,  
mutation in engineering of site for)

RN 2321-07-5 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
(CA INDEX NAME)



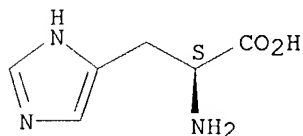
IT 71-00-1, **Histidine**, biological studies

RL: BIOL (Biological study)  
(of antiluorescein catalytic antibody light chain, in binding by  
transition metal)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L45 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:192479 HCAPLUS

DOCUMENT NUMBER: 116:192479

TITLE: Metal-binding Ig variable domain **proteins**

INVENTOR(S): Lerner, Richard A.; Roberts, Victoria N.; Getzoff,  
Elisabeth D.; Tainer, John A.; Benkovic, Stephen J.

PATENT ASSIGNEE(S): Scripps Clinic and Research Foundation, USA  
 SOURCE: PCT Int. Appl., 72 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9116912	A1	19911114	WO 1991-US3149	19910507
W: AU, CA, FI, JP, NO				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
CA 2081213	AA	19911109	CA 1991-2081213	19910507
AU 9178892	A1	19911127	AU 1991-78892	19910507
AU 651348	B2	19940721		
JP 05507089	T2	19931014	JP 1991-509846	19910507
EP 597842	A1	19940525	EP 1991-909827	19910507
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
NO 9204281	A	19921106	NO 1992-4281	19921106
US 5665865	A	19970909	US 1994-343658	19941122
PRIORITY APPLN. INFO.:			US 1990-521258	19900508
			US 1990-539980	19900618
			WO 1991-US3149	19910507
			US 1993-64795	19930519

AB The title proteins can form a coordination complex with a metal cation. The protein contains (1) a sequence of amino acid residues that defines a variable domain of an Ig; and (2) 3 contact amino acid residues in the variable domain of 1 that define a metal-binding site. Identification of Ig variable domain sites for introducing a metal ligand, as well as catalytic antibody design, are discussed. Recombinant prodn. of QM212 (a single-chain antigen-binding protein derived from a light chain portion of an antiluorescein monoclonal antibody) is described. QM212 simultaneously bound both Cu(II) and **fluorescein**.

IC ICM A61K035-14

ICS C07K015-22; C07K015-28

CC 15-3 (Immunochimistry)

Section cross-reference(s): 3, 7

ST metal binding Ig variable region; cloning DNA metalloantibody; catalytic antibody metal binding; **protein** Ig fragment metal binding; copper binding metalloantibody

IT Deoxyribonucleic acid sequences

**Protein** sequences

(for QM212 model metalloantibody)

IT Antibodies

RL: BIOL (Biological study)

(monoclonal, to **fluorescein**, model metalloantibody derived from)

IT 7440-02-0D, **Nickel**, complexes with Ig variable region domains 7440-43-9D, Cadmium, complexes with Ig variable region domains 7440-48-4D, Cobalt, complexes with Ig variable region domains 7440-50-8D, Copper, complexes with Ig variable region domains 7440-66-6D, Zinc, complexes with Ig variable region domains

RL: PRP (Properties)

(divalent, for metalloantibody)

IT 52-90-4, Cysteine, biological studies 56-84-8, Aspartic acid, biological studies 56-86-0, Glutamic acid, biological studies 71-00-1,

Histidine, biological studies

RL: BIOL (Biological study)

(metal binding to, of Ig variable region domain, metalloantibody in relation to)

IT 2321-07-5, Fluorescein

RL: PRP (Properties)

(monoclonal antibody to, model metalloantibody derived from)

IT 7440-02-0D, Nickel, complexes with Ig variable region domains

RL: PRP (Properties)

(divalent, for metalloantibody)

RN 7440-02-0 HCAPLUS

CN Nickel (8CI, 9CI) (CA INDEX NAME)

Ni

IT 71-00-1, Histidine, biological studies

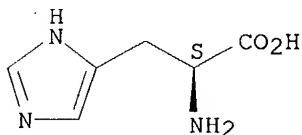
RL: BIOL (Biological study)

(metal binding to, of Ig variable region domain, metalloantibody in relation to)

RN 71-00-1 HCAPLUS

CN L-Histidine (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



IT 2321-07-5, Fluorescein

RL: PRP (Properties)

(monoclonal antibody to, model metalloantibody derived from)

RN 2321-07-5 HCAPLUS

CN Spiro[isobenzofuran-1(3H),9'-[9H]xanthen]-3-one, 3',6'-dihydroxy- (9CI)  
(CA INDEX NAME)

